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RADIO DIRECTING







The author directing the Columbia Workshop.

RADIO DIRECTING

BY

EARLE MCGILL

*Casting Director, Director, and Producer, Columbia
Broadcasting System; Instructor, New
York University, Radio Workshop*

WITH A FOREWORD BY

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FIRST EDITION

McGRAW-HILL BOOK COMPANY, INC.

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1940

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THE MAPLE PRESS COMPANY, YORK, PA.

TO CONNIE

who

saw that it was done

FOREWORD

The past ten years have witnessed a phenomenal growth in the number of radio courses offered in our colleges and universities. Instructors, unaware of the differences between a kilocycle and a decibel, and vaguely suspicious that radio was the poor relative of the theatre, concert hall, lecture platform, and classroom, have had the responsibility for such courses thrust upon them. When confronted with both students and a baffling array of gadgets, they have searched desperately for a written document that would aid them in meeting their situation.

During this same period others have become increasingly familiar with the medium and its use. As their familiarity has grown, the conviction has deepened that, to give a radio course solidity, a book must be available that would treat the fundamental problems of production sanely and practically.

Earle McGill has written such a book. In it the novice will find practical guidance and counsel. The initiate will profit by the same guidance, but, more importantly, he will discover a treatment of the subject that his own experience will tell him derives from the richer experience of a fellow worker.

It is fortunate that the first serious attempt to treat radio production has been written by one who makes his living in radio. Those of us concerned with broadcasting courses in colleges and universities, because of the nature of our jobs, are seldom able to devote all of our time and energy to radio. Hence, our knowledge of the medium, the variety of programs that it utilizes, the many major and minor crises that prematurely age the director, and the harsh disciplines that radio imposes on its workers lacks the intimacy and reality of the knowledge of one to whom these matters make the difference between holding and losing a job.

Within these pages most readers will agree that a structure of practical advice has been reared on the solid base of a sane philosophy about radio. Herein one will find no "arty nonsense." Rather, one will sense the author's thorough knowledge of poetics and acting and the relation of radio to both; his sen-

sitivity to high standards of artistic achievement and the analysis of practical methods by which they may be attained; and his honest respect for the medium and a discussion of the means by which fuller advantage can be taken of its potentialities.

This writer ventures the opinion that here is a book that students will like. In the traditional sense not all the words chosen to clarify and vivify the author's meaning are academic. It is an author's duty to express himself clearly and vividly; it is his prerogative to be unacademic and unorthodox in the achievement of results.

The most important factor determining the value of any book is the author. Those who know Earle McGill will find in *Radio Directing* the result of the author's experience in theatre, cinema, and radio. Not only has Mr. McGill been associated with radio professionally, but he has taught at New York University and the State University of Iowa. At these institutions, because of his experience in the classroom and his contacts with teachers of radio, he has gained an insight into the problems peculiar to those of us not associated with network operations. This knowledge and insight have been enhanced by his close association with the American School of the Air and frequent attendance of the national meetings of such organizations as the National Association of Teachers of Speech, the National Council of Teachers of English, and the Ohio Institute of Education by Radio.

Perhaps the author of this Foreword may be permitted a personal reference. I have watched Earle McGill direct many shows. I have talked with actors, writers, sound men, operators, and students about him. Together he and I have spent many hours in the discussion of radio and its allied arts. I know the author of this book to be an individual who combines a broad knowledge of dramatic literature with an almost instantaneous sensitivity to effective writing; an appreciation of capable acting with a rare understanding of how to get it from actors; and a sound knowledge of the principles that produce a good show with the ability to blend the discrete elements into a unit that flows smoothly from beginning through middle to end.

Radio production will be enriched because Earle McGill has written *Radio Directing*.

H. CLAY HARSHBARGER.

ACKNOWLEDGMENTS

The writer wishes to record his appreciation and thanks to those who have contributed toward the preparation of this book, especially to W. B. Lewis, Vice-President in charge of Broadcasts for CBS, and Douglas Coulter, Assistant Director of Broadcasts, CBS, for their encouragement and enthusiasm; to Max Wylie for help in assembling script material; to John Studebaker, Commissioner of the Office of Education, for material of special interest to educators; to Henry Grossman, Engineering Department, CBS, for his valuable editing of some of the engineering aspects of the book. To Renée Brown for unflagging zeal in the preparation of the manuscript, special thanks are due. For his delightfully biased foreword, the author is blushinglly indebted to Professor H. Clay Harshbarger.

EARLE MCGILL.

NEW YORK,
March, 1940.

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RADIO DIRECTING



CHAPTER 1

MICROPHONES AND STUDIOS

As a profession, the direction of radio shows is slowly but surely acquiring a dignity that has been lacking for 18 years. The spectacular growth of radio to a point where it took an integral and important place in the minds and hearts of millions of people was so rapid, and to a certain degree was attended by so little criticism, that there was small necessity for shrewd directorial supervision. There was no need for the awareness and the imaginative approach that characterizes the first-rate director in the allied art forms of the theatre and the motion picture.

As the listener became more critical of what was offered to him, however, and as more broadcasters came to compete for his attention, it was only natural that the quality of the show that was offered should improve. Today, no matter what the broadcast—whether it is the international pickup from abroad, the quiet, well-ordered educational broadcast offered to the classroom, or the rowdy antics of the variety show—no one can deny the enormous and steadily increasing improvement of the programs offered week in and week out. In this improvement the attention that has been bestowed upon the direction and production of programs has been an important factor. To a great degree the improvement lies in the hands of one man, the person who puts on the show and sees it through the air, the radio director or radio producer. The expert coordination of all the artistic and mechanical factors that go to make up a broadcast rests with him, and the measure of success of a program can be traced to his competence. This assertion is not meant to take away one iota of the importance of the engineers, those unsung heroes of the control rooms and laboratories, but they

themselves will be the first to admit that if the director of the broadcast does not know his job all their high, fine decibels and watts and modulations can hit the Heavyside layer with an embarrassing bump.

Who is the radio director or producer? What are his antecedents? What does he do, and where is he going? People who are unfamiliar with the varying and bewildering terminologies of radio frequently ask what the difference is between the director and the production man. It is a reasonable question, the answer to which lies in the trade practice of the industry itself. The radio *director* is a relatively new bird. For years the man who produced a radio show, who miked it, timed it, cut it, saw it through the air, who was, in short, the head man in the control room, was the *production man*. His standing as a director, as that word is understood in the theatre or in moving pictures, was nonexistent. Such a high-sounding title as "director" was out of place in the radio field. He was a production man, a hard-working, drudging, unimaginative peon equipped with sorely tried Anglo-Saxon good manners, smiling hard and long through his well-bred agony, trudging from one studio to another. His dramatic background was usually dubious. He had put on skits at prep school or had worn armor and a blowsy wig when they put on "The Libation Pourers" as his commencement play at college. He had given readings from Molière and Bulwer-Lytton on murky Chautauqua stages. Every once in a while the studios would let him rig up some outlandish gibberish that stood on the dark outposts of what civilized people call drama. Sunday radio supplements would then run a half column about the beginnings of a new something called radio drama, but there would be never a word in it about the helot called the production man who sweated over the coprolitic dialogue of that strange era. He went on hoping that a day would come when he could step into a rosier heaven where he would be a production man on a different commercial broadcast every night, beginning on Monday night with Jack Pearl and finishing on Sunday night with Eddie Cantor or the Cliquot Club Eskimos.

But presently radio bowed to an irresistible organic law of growth and change, and a new attitude developed toward the job to be done and the man to do it. It was recognized that since the man who produced the show held sound investments at the

mercy of his talent it was smart to go far afield from the dramatically Piltdown men who until now had been laboring in the control room. Where there had been production men before, the shrewder broadcast executives brought into their studios men who had directed in the theatre and who knew a pinrail from a stage brace. There are not many such men in radio. They needed no vice-presidential ukase to establish them as directors. They were directors before they entered the radio field, and they are still directors. When they work side by side with production men, the production men assist the director somewhat as a stage manager assists the stage director.

The term production man to describe the man who puts on the show is seemingly too deeply imbedded in the idiom of radio to disappear overnight. And as a matter of fact, the production man does put on the show throughout most of the industry. In general, it is only in the larger studios in metropolitan areas that the luxury of a director *and* a production man can be afforded as a standard studio producing unit. Even in these localities, the distinction is none too clearly known and understood. If Max Reinhardt should be working in studio 3 and across the way in studio 4 Gordon Craig or Komisarjevsky were whipping up some four-dimensional radio treat, countless die-hards in the trade would refer to them—if they were aware of them at all—as production men and not as directors.

With the growth of interest in educational radio and with an increasing number of educators concerning themselves with radio as an adjunct to classroom work and as a powerful force in the larger field of adult education, there has arisen a need for a book on the subject of the direction of radio broadcasts. It is hoped that this book will, to some degree, meet that need. Although innumerable books are available on the direction of motion pictures and stage plays, surprisingly few books are available that point out the ways and means of directing radio broadcasts. In the following pages the simplest and most effective methods of radio direction and production are discussed. As far as possible, technical or quasi-technical language will be avoided. Radio is a field wherein one may be very quickly lost in the mazes of high-flown and impressive verbiage. Such will not be the fate of the readers of this book, for, with the exception of this first chapter on Microphones, the book almost

completely avoids the curious microelectrical words that burst noisily into our language somewhere back in the early twenties.

One of the difficulties of writing a book on radio direction lies in determining a logical and gracefully integrated progression of the departments of the subject to be covered. At exactly what point, for example, in the scheme of learning radio direction should the student know how to effect a smooth board fade? Again, should he know all there is to be known about timing before knowing a workable routine of conducting a microphone rehearsal? Unfortunately a radio director must, like a juggler, know how to keep many balls in the air at one time. As with an arrow in flight, every instant in the life of a broadcast is both an arrival and a setting forth, for while one cue is being given two others cry for instantaneous attention, and every one of them carries its own demand for a specialized knowledge. If each end is a beginning, where, then, should one begin? I begin with the microphone, because it follows logically upon the word. In the beginning was the word, and if the word is to go out on the air it has to hit the microphone first. If the discussion of the microphone seems alarmingly technical, it is only because engineering matters resist paraphrase.

Since effects are always a problem of radio production, an early discussion of them could not be amiss. Before the routine involved in the microphone rehearsal, dress rehearsal, and air show is set forth, the student should know what preparation for the broadcast is needed, what the general principles of orchestra setup are, and how he should go about casting the show. If, in addition, he is armed with specific information about the operation known as the board fade and has learned what to do with that old devil stop watch, there is no reason why he should not be headed at least in the general direction of becoming a radio director.

I have tried to point out methods of producing many different types of broadcast, but at no point has it been my intention to suggest these methods shall be final. Every single broadcast carries with it its own special factors of personnel, acoustics, equipment, production, and transmission, and the able director is the one who knows that he is working in a flexible medium that permits him to range widely and extend his method as far as his own canons of good taste and imagination will carry him.

One who for the first time witnesses a broadcast from the studio cannot fail to be impressed by the strange goings on, the complicated and esoteric monkeyshines that go to make up a radio production. He cannot help but wonder that so much abracadabra is necessary to produce what sometimes emerges from the loud-speaker of the listener, as pedestrian entertainment. It need not be pedestrian entertainment—and, in fact, never is—when the production of a broadcast is in the hands of an alert, imaginative, and resourceful director. Such a director will utilize all the mechanical and live facilities available to the broadcast in such a manner that what results is an honest, intelligent program within the limits of its own ideational and entertainment purpose.

Bear in mind that the more complicated broadcasts are fusions of simpler broadcasts. For example, a broadcast celebrating the anniversary of the entrance of America into the World War might be made up of several dramatizations, showing first the sinking of the *Lusitania*; Woodrow Wilson speaking before both Houses of Congress, the vote on war or peace; then a typical American family faced with the loss of one of its members on the battlefield; and finally, scenes from the battlefield. In the same broadcast there might also be two remote pickups, one from Washington, D. C., and another from Paris, France. The show would conclude with a 4-minute plea for peace, and the entire production might be welded together by a small symphony orchestra. The whole broadcast is a dramatic show made up of several units, namely drama, a domestic and an international pickup, music, and a talk. Any one of the units by itself would require a specialized type of production.

It often happens that on paper a broadcast may seem to be the simplest of production matters. It appears to be so well grooved into a standardized pattern that nothing could possibly occur that might upset its smooth routine, and yet, before the sign-off, unseen complications can arise that tax to the utmost all the composure, talent, and resourcefulness of its director. A cue or signal may be given without concern for its far-reaching effect, some one of the many elements of the show may go wrong, and presently a whole network is out of step, and perhaps several hours pass before it can be adjusted to normal operating conditions. These matters are the concern of this

book. . A knowledge of the many and varied techniques of broadcasting is a director's safest defense against the embarrassing results of ignorance, and an examination of the several types of microphone that are at the disposal of the director in putting on the broadcast is an effective way to begin that defense. The director must be able to produce his broadcast on any or all types. Not only must he know the characterizations of all types but he must know how they respond under widely varying acoustical conditions.

The two main types under which microphones may be classified are:

The *dynamic* or moving-coil type.

The *velocity* or "ribbon" type.

Let us consider first the dynamic microphone and some of its interesting developments.

THE DYNAMIC MICROPHONE

The dynamic microphone receives the sound impulses and operates under the pressure principle. To understand more clearly what is meant by this, consider the internal structure of the instrument. It contains a thin duralumin diaphragm that is clamped around its outer edge. To this diaphragm is attached a coil of aluminum ribbon. Motion of the diaphragm causes this coil to move in the magnetic field in which it is located. Motion of the coil in the magnetic field, *caused by sound pressures acting on the diaphragm*, induces a voltage in the coil that is proportional to the velocity with which it moves. Since this type of microphone is actuated by changes of pressure on the diaphragm, it is known as a *pressure-actuated* microphone.

It is interesting for a director to know what principle actuates a microphone, but it is much more important to know its directional characteristics, *i.e.*, does it pick up sounds directly from one side, from all sides, or from two sides? If it picks up sound directly from only one side—the other being "dead," insensitive to sound—it is a "uni-directional" microphone. The Western Electric microphone known to engineers as the 618-A is one of the best and most commonly and successfully used dynamic microphones. It is uni-directional, *i.e.*, one side is sensitive and picks up sound, and the other is simply the back or case

of the instrument. It has many features that make it an extremely useful microphone. It is rugged and requires no delicate care in handling and maintenance. Changes in temperature, humidity, and barometric pressure have no unfavorable effect upon its performance. The effect of wind noises, which can be a serious obstacle to outdoor pickup, has been greatly



Dynamic microphone (W.E. 618-A).
(Courtesy of Western Electric Company.)



Non-directional microphone (W.E. 630-A). (Courtesy of Western Electric Company.)

reduced in this type of microphone, making it valuable for such service.

Another interesting and serviceable microphone encountered in daily production is the one called popularly the "eight-ball" mike (630-A), from its resemblance to the ball of that number on the billiard table. It is put out by the Western Electric Company and is a development of the Bell Laboratories. It is a *dynamic*

microphone, with the advantage that it is essentially *non-directional* in its response, which means that it responds to sound coming from any direction. It is light in weight, rugged, dependable, and free from temperature, barometric, and humidity effects. It is small in size, consisting of a spherical housing



With the disk-shaped baffle applied, the 633-A microphone becomes a directional unit, and by means of the convenient universal joint it may be literally aimed at the sound source it is desired to pick up, effectively shutting out sounds from other directions. Without the disk-baffle, this microphone becomes a non-directional unit by returning it to a vertical position. (*Courtesy of Western Electric Company.*)

2½ inches in diameter, with a 2½-inch acoustic screen held a fraction of an inch off the surface. By utilizing the Western Electric Acoustic Baffle Assembly the 630-A may be converted into a semi-directional microphone, with a response comparable to that of the Western Electric 618-A, *i.e.*, it becomes to all intents and purposes a uni-directional microphone.

Another popular dynamic microphone put out by the Western Electric Company is known as the "salt-shaker" mike (633-A). The "salt-shaker" microphone performs equally well as a *non-directional* and as a *directional* microphone. It is conveniently mounted, small in size, light in weight, and rugged.



Pressure-actuated RCA microphone (Type 88-B). (Courtesy of RCA.)

By varying the positions in which the microphone is used, its directional characteristics can be changed. The 633-A may be suspended by its cord, or it may be mounted on a stand. When suspended by the cord or mounted directly on its stand, the microphone is in a vertical position and performs effectively as a *non-directional* unit. A group of people may be placed around it without close crowding, and it picks up an orchestra without discriminating against any particular instrument or section of instruments.

The *directional* characteristic of the "salt-shaker" mike may be brought partly into effect by the use of a swivel joint that enables the angle of the microphone on the stand to be varied from the vertical to the horizontal position. A baffle attachment, which is a disk $3\frac{1}{4}$ inches in diameter and that fits snugly over the face of the microphone, may be used to accentuate the directional effect.



Velocity microphone (RCA Type 44). (Courtesy of RCA.)

THE VELOCITY MICROPHONE

All the microphones that we have discussed up to this point have been *dynamic* microphones, actuated by changes of pressure upon the diaphragm. They are therefore pressure-actuated.

The velocity microphone has been called the "microphone without a diaphragm." The moving element in this microphone is a thin metallic ribbon suspended between the poles of a magnet, with its length perpendicular to and its width in the

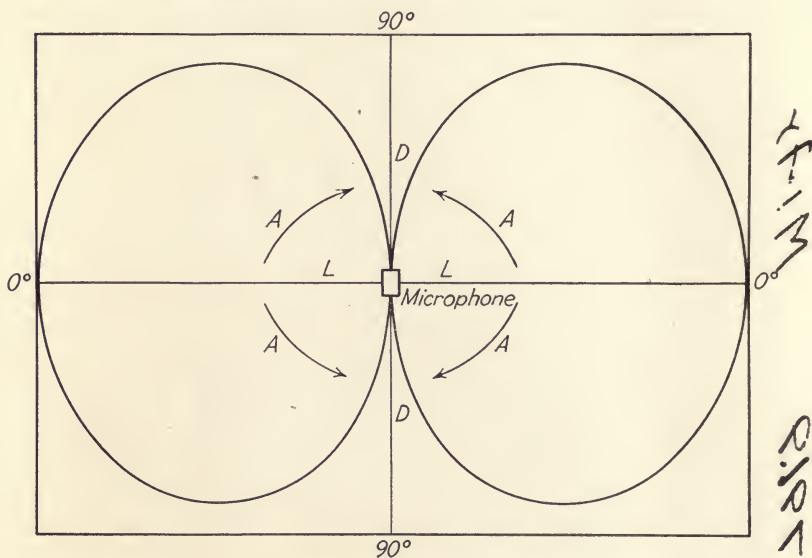
plane of the magnetic lines of force. These magnets are so constructed that they do not impede the free passage of the sound waves through the microphone. The ribbon element is made of thin Duralumin and is so light that its motion corresponds to the motion of the air particles. It is suspended from metal cross-pieces. Sound waves reaching the ribbon vibrate it within the magnetic field set up by the magnet. The vibration of the ribbon is in exact accordance with the sound vibrations and, occurring as it does within the magnetic field, sets up corresponding alternating electric potentials across the primary of its associated transformer. These minute voltages are subsequently amplified to the power level required for broadcasting. Because it is actuated by the velocity of the air particles it is a *velocity-actuated microphone*.

One of the most important characterizations of the velocity microphone is its directional pattern. Since the ribbon is suspended in free space, sound waves approaching the microphone from a direction in the same plane as the ribbon have no effect upon it. Sound waves *from either direction* along an axis perpendicular to the plane of the ribbon have the maximum effect. In other words, the velocity microphone (RCA Type 44) is bi-directional in response, allowing equal pickup from front and back. In the accompanying diagram the two sides marked *L* are the "live" sides, and the two marked *D* are the "dead" sides of a velocity microphone. As one stands directly on the "beam" of the mike *L* and moves slowly along the arcs *A* toward *D*, the field of sensitivity becomes increasingly less as the dead area is approached, and, conversely, if one stands directly on the dead area and moves on the arc *A* toward the beam *L*, the field of sensitivity is increasingly greater until maximum sensitivity is reached on the beam of the mike.

It is far from the purpose of this discussion of microphones to claim that one type is better than all others. Engineering has evolved a number of instruments that offer a high degree of sensitivity, clarity, definition, and range of frequency response, but the perfect all-purpose microphone has not yet been invented. It will be found that where a director is striving to create a special effect suitable to the peculiar demands of his script, one microphone may suit his purpose better than another. Perhaps he may find more quickly exactly what he wants on a

given microphone, but that is not to say that he would not find it on another if he took the time to experiment and change acoustical conditions to meet with its special needs.

Studios are not equipped to meet the exacting requirements of every director who may want to change its equipment to suit his whims. A studio is equipped after study and experiment by skillful engineers who determine what type of microphone will respond to the special acoustical conditions of that studio. The mike you get is the mike you will use.



The fact that a velocity mike is sensitive on both sides, enabling it to accommodate a large number of people without the danger of their shoving or pushing one another when the cue comes to speak, would argue its greater range of usefulness in the production of the dramatic show. The two dead sides of the mike offer the opportunity of creating subtler shadings of sound perspective (the illusion of depth or third dimension) than is the case when the mike picks up sound indiscriminately from all directions or from only one direction.

RCA TYPE 77-B (UNI-DIRECTIONAL MICROPHONE)

This uni-directional microphone has a directional pickup pattern wholly different from that of any other type of micro-

phone. Although it resembles the velocity microphone in appearance and construction and is in fact evolved from research and development work on the latter, the RCA Type 77-B uni-directional microphone combines the principles of velocity and pressure operation. For this reason it possesses in a surprising degree the best features of each and overcomes the disadvantages inherent in both. In view of the fact that it is designed to pick up sound arriving from one direction or—more accurately—from one side while almost completely rejecting sound from the other side, it is admirably adapted to studio pickups, public address, and sound-reinforcement applications.

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Instead of the diaphragm (in the commonly accepted meaning of the word) the uni-directional microphone contains a thin metallic ribbon suspended between the poles of a permanent magnet, with its length perpendicular to and its width in the plane of the magnetic lines of force. The ribbon is tightly clamped at the center as well as at the top and bottom. The lower half is open front and back and operated as a regular velocity microphone. Now, in order to make the upper half of the ribbon operate as a pressure microphone, it is necessary that the rear of this section be enclosed. At the same time it is not possible just to block this section off, since such a contrivance would result in increased response at certain frequencies. Rather, it is necessary to present an acoustic impedance to the back part of the ribbon. An infinitely long tube would be the ideal impedance, but this, of course, is impossible. Instead, an ingenious labyrinth that gives practically the same effect is used. Although this labyrinth has a finite length, the desired damping of reflection is obtained by filling it very loosely with sound-absorbing material. The result is the upper half of the ribbon becomes an efficient pressure-operated microphone.

WESTERN ELECTRIC 639-A (CARDIOID DIRECTIONAL MICROPHONE)

This microphone is a development of Bell Telephone Laboratories, the research laboratories of the American Telephone and Telegraph Company and the Western Electric Company. From the standpoint of the radio director it is important to know the directional response of this microphone. It is a non-directional, a uni-directional, and a bi-directional microphone. Any of these

directional characteristics may be called into play by the use of a simple switch. The slotted control shaft of the switch is set flush in the surface of the housing, and the three positions



Left.—Uni-directional microphone (RCA Type 77-B). (*Courtesy of RCA.*)

Right.—Western Electric's new "cardioid" uni-directional microphone, (639-A) combines in one instrument the pickup characteristics of a mono-directional, bi-directional and a non-directional microphone. Either of the effects may be selected by operating a small rotary switch set flush in the surface of the housing. (*Courtesy of Western Electric Company.*)

are designated by the letters *C* (cardioid) for the uni-directional response, *D* (dynamic) for the non-directional response, and *R* (ribbon) for the bi-directional response.

RCA TYPE 77-C

This is a new type of microphone providing great flexibility in directional pickup. It is similar in construction, size, and

finish to the RCA 77-B (uni-directional) but is provided with a switch that ensures a pickup that will be either bi-directional, non-directional, or uni-directional, as desired.



RCA all-purpose microphone Type 77-C. By turning the switch to line up the pickup pattern desired, it may be used for bi-directional, uni-directional, or non-directional purposes. (*Courtesy of RCA.*)

THE MODERN STUDIO

In a radio studio, what is *visible* is *functional*. Every factor in the appearance of a studio is an engineering factor, an acoustical factor. Different parts or zones in a studio have different acoustical characteristics. This permits variable *placing* of instrument, voice, sound effect (and a variable facing of it as to direction) that provides a choice and a control of acoustical effect. Broadly, there are three acoustical zones in a studio:

A "dead" end—characterized by a high degree of sound absorption.

A "live" end—characterized by a high degree of sound reflection.

A middle area—with an intermediate degree of "liveness."

The walls at the live end of a studio are constructed as a series of resonance diaphragms of seasoned wood. They are held in suspension, with air chambers behind them. This introduces into studio building principles of resonance similar to those involved in the wooden sounding chamber of a violin or cello. Such a wall serves not only as a resonance diaphragm but as a controlled echo plane. It is highly reflective. About one-third of each adjoining wall is likewise paneled in wood, with this important difference: the wood panels on the wide wall are placed on beveled or slanted surfaces so that the sides of the walls form shallow V's running from ceiling to floor. These V's are so placed that no wood panel on one of these two walls is parallel to the wood panel on the opposite wall. The very latest construction policy of the engineers who build radio studios is to slant or "V" all the walls of the studio. Because the angle of reflection for a sound wave is like a light wave, approximately equal to the angle of incidence, this "V-ing" prevents the bounding back and forth of sound waves between parallel surfaces and thus avoids a resulting "flutter." Nevertheless, because the walls remain highly reflective surfaces, reverberation is achieved—a highly desirable quality—adding life and brilliance to music or voice. Supplementing these reverberation planes, the flat echo plane serves an additional acoustical purpose. It is a "live" wall. Opposite it at the other end of the studio is a "dead" wall (deadened by the most modern kind of acoustical treatment). Sound waves reaching the echo plane are "bounced" directly back toward the microphone, providing a single controlled "echo" not separable from the original musical impulse but adding perspective to it. This would be acoustically disastrous if the sound wave traveled past the microphone and was reflected from the opposite end of the studio. But the dead wall stops the sound at that point, kills it, absorbs it completely. It is the combination of the single controlled echo (not audibly perceptible as such) together with the additional liveness (minus flutter), imparted by the non-parallel reverberation planes, that add luster and brilliance to a program originating in such a studio.

No studio is any better than the degree of high fidelity of sound response that it affords. Fidelity in the acoustical sense is measured by the flatness of the reverberation curve. In plain terms, a flat curve means that sounds of all frequencies ranging from the lowest to the highest pitch, are reflected or absorbed to the same degree. In other words, there is no predistortion; neither the bass notes nor the treble notes, neither brasses nor string nor reeds are falsely emphasized. In order to prevent vibration, the walls and floors of studios "float" on acoustical material that separates them from the main structure of the building.

At this point mention might be made of the echo chamber, which, although it is not a studio, is assigned when needed for use in conjunction with a studio in the same manner in which an additional studio might be assigned. An echo chamber is a tunnelliike room constructed in the form of a maze winding and twisting for a distance of 90 feet. At one end is a loud-speaker and at the other, a microphone. The voice is fed from the studio to the loud-speaker in the echo chamber from which it finds its way through the twists and turns of the maze, picking up increasing reverberation until it reaches the microphone, where it again comes back to the engineer, who proceeds to mix it with the rest of the show. By changing the position of the microphone in the chamber, bringing it closer or farther away from the loud-speaker (thereby changing the time lag of pickup between the two instruments), a greater or smaller echo effect is brought about. These various changes of echo so alter the quality of the voice or sound fed through the echo chamber that many interesting and varied dramatic effects are created. The echo chamber imparts to a voice fed through it the quality of the voice of a speaker addressing a crowd in a large hall or of a voice calling from the cavernous depths of a mine or grotto.

An echo chamber may be used also as the originating point of certain elements of production. Sound effects can be worked directly in the echo chamber and fed back to the engineer's panel. The director would have to judge for himself whether the effect of sound created in this manner enhanced his show or whether it would be better or safer production to build the same sound in the studio along orthodox lines. In any event, such sound production might be more safely adopted under a production

program geared to workshop or experimental methods. There is ample field for broadening the scope of production effect that is possible in the utilization of the echo chamber.

No two studios have the same acoustic characteristics, and a director working in many different studios must adjust himself to the acoustic and physical changes he encounters. Some studios are very "live," *i.e.*, they have so many hard surfaces reflecting sound that they impart too much brilliance to music when it is picked up on the mike or too much echo in the voice quality. Another studio may be too "dead," *i.e.*, so many wall surfaces may be treated to bring about sound absorption, in addition, perhaps, to too many draperies, that music has little or no brilliance and a voice has a dead, lifeless quality. The draperies mentioned are found at the live end of studios, are usually hung in sections, and may be drawn to cover as much or as little of the hard reflecting surface as the director feels will be sufficient to give the exact amount of brilliance to the music and the voice. When a director enters a studio to which he is unaccustomed, he should familiarize himself with the general acoustical setup before him. A sharp clap of the hands in the live area will convince him at once of the degree of liveness of that end of the studio. If he is about to produce a broadcast with a small orchestra and a small cast and if the studio is large, he will probably find it a good practice to reduce the roominess by drawing drapes over some of the live surface. On testing the actors' voices, he might find such a booming, reverberatory, hence unlifelike, quality that it would be necessary to cut down the reverberation partially by setting up sound-absorbent screens a few feet back of the live side of the mike. Just how far back he would have to discover by trial and error. The director quickly becomes trained to noting variations in the quality of the sound that is coming to him at rehearsal over the monitor in the control room. From the moment rehearsal starts his ear will accept or reject tonal differences. Upon rejection he must change some part of the acoustic setup. He will tip the face of a microphone, turn it slightly the opposite way, caution an actor to work closer or farther away from the mike; he will close sound-absorbing curtains or open them; he will try moving his microphones closer or farther away from the live end of the studio; he will put up sound-absorbing screens or take them down; put down a rug

under the cast mike or take it up; in short, he will change and change again until the sound quality heard on the monitor satisfies him as being the best he can get for his purpose under the acoustic setup before him. Working often in the same studio, he will come to know it as one knows an old friend, recognizing its peculiar echoes and dead spots, circumventing them, if need be, by killing them before they get a chance to come into being.

CHAPTER 2

SOUND EFFECTS

It is not unusual that visitors to radio studios get as much fun from watching the sound effects engineer while the show is on the air and snooping around the sound effects table after the show is off as they do out of any other part of the broadcast. Sound effects are the modern-age substitutes for the old-fashioned trap drummer who fascinated everybody during the intermission of the local stock-company production of "Quincy Adams Sawyer." At that time the orchestra would play some rollicking rural number and the drummer would interpolate barnyard sounds, leaping from moo cows to roosters to pig squeals to snare drum without losing a beat. He did it with such bravura that every one was left warm and glowing inside, glad, probably, to have been permitted to behold a virtuosity not of this world. The sound effects engineer of today, however, is far removed in training and ability from such Currier and Ives worthies, despite the spiritual kinship inherent in their respective jobs. Many of them have spent years in training in the finest engineering colleges in America and are experts in the physics of sound.

Sound effects have as important and permanent a place in the production of the radio broadcast as they have in motion pictures and undoubtedly will continue to have with the arrival of television, but, to paraphrase an old saying, one man's sound effect may be another listener's headache, and the question of what place a sound effect should have in a broadcast is one that might bear discussion. Before, however, we attempt to postulate a philosophy of sound effects, or, more properly, try to set forth criteria of sound effects usage, it would be well to examine the field and classify the various types of effect in general use. Sound effects may be

Vocal.

Manual.

Electrical.

Recorded.

Audio-frequency.

Acoustical.

Echo or reverberatory.

Musical.

VOCAL EFFECTS

Vocal effects are created in the studio by actors or by vocal sound effects specialists. There are animal and bird imitators who are extremely adept at their trade and who can, on cue from the director, reproduce vocally any of the animal sounds commonly met with and, in some instances, as many as several hundred bird calls.

Bradley Barker, one of the best known vocal sound specialists, formerly an actor, discovered his curious guttural gift while working on a moving-picture lot. A shot was being taken that required the sound of eggs frying, and, when the electric frying apparatus went dead, someone called upon him in the pinch to make the sound of a frying egg. He did so with spectacular success and from that moment was launched on a new career that presently became so lucrative that he ceased acting altogether and concentrated on vocal sound effects work. In recent years he has combined picture and radio sound effects work with a busy lecture career in the public schools of New York. Not everyone is adapted to this kind of work, either vocally or temperamentally. It requires years of patience and study, and, unless properly done, animal sounds can wreak havoc with the vocal cords.

Vocal effects other than bird and animal noises can be produced by the cast as a body, as, for instance, a cheering or howling mob. Effective production often results from combining the live mob effects of the cast with recorded mob effects, provided they are both produced in the same sound perspective. Good recorded mob effects are difficult to come by. They invariably sound exactly like what they are—recorded mob effects, but by directing the live group in the studio to combine perspectively with the recorded crowd, the records can be made to sound twice as well as they do without such live assistance. In the Columbia Workshop production of "The Fall of the City," written by Archibald MacLeish and directed by Irving Reis, instantaneous

recordings were made of the shouts and cheers of the huge crowd that was the protagonist of the drama. When the show went on the air, these records were mixed or blended with the live shouts and cheers of the crowd, and the effect was gained of having a much greater mob of people than that which was actually participating in the broadcast.

MANUAL EFFECTS

Manual sound effects are what their name implies, sounds created in the studio by hand. They are worked into a show at rehearsal or in advance of rehearsal to meet the specific need of one particular broadcast. Manual effects are often of a type that does not lend itself very easily to recording. For instance, manual effects of the downpour of rain are usually very effective, but when the same effect is recorded, the result can sound like a record with an excess of surface noise. Such sounds as the opening and closing of doors, knockings, footsteps, revolver shots, gunfire, the rattle of dishes, and gavel sounds are invariably produced manually. Most of them by their very nature are instantaneous and synchronize so finely with the dramatic action that they can be produced manually more quickly and accurately than they could be by using records which would require time to "spot" (*i.e.*, to pick out the exact spot on the groove of the record to synchronize with the dramatic action.) Not to produce them manually would necessitate an enormous record library of all such ordinary and routine sounds built to dozens of different sound perspectives to take care of the multitudinous needs of hundreds of plays.

What scenery is to the stage, sound effects are to radio broadcasting. Seven years ago the business of providing illusory background noises was a minor part of broadcasting. At NBC today it is the responsibility of an entire department under the supervision of Ray Kelly. Kelly once had a part-time assistant; now he has a staff of 14 experts. The apparatus in the accompanying layout (pages 24 to 27) represents only a portion of the original sound effects repertoire at NBC. In addition, NBC has a library of 800 disks on which are recorded 3,000 different sounds—from the sizzle of a frying egg to the crash of a thunderstorm.

There are dozens of standard sounds constantly recurring in one dramatic show after another, and every radio station is

equipped with a storeroom filled with hundreds of standard manual sounds effects. The variety and excellence of their sound effects are properly a source of pride to radio stations and it is their practice to add constantly to the supply.* It is not unusual to have many different gadgets that produce the same sound and a director needs only to make his preference known to be supplied with the one he wants. In addition to their storerooms, stations also maintain laboratories in which sound technicians create, test, and build new effects and repair old and used ones.

Where would radio drama be without the ever-present door? More than any other effect, program in and program out, the sound effect door is well-nigh indispensable. It can create for the ear quickly an accurate aural "picture" of the relative positions of the various speakers. It is the mother and father combined of the whole art of perspective in radio drama. Open and close a door, an actor walks toward and on the beam of the mike, and what more could any listener ask to help him to know where the character is? Not so long ago the National Broadcasting Company gave to the Smithsonian Institution some of the very earliest microphones used in broadcasting, but no one has ever tossed an orchid to that early production man who seized upon a door and found that it was good.

Since so much depends upon the door used in production, a vast amount of attention and ingenuity has been spent to produce the best possible door for the job. Walter R. Pierson, head of Columbia's sound effects department, can and has become really eloquent upon the subject of doors. He says:

There are numerous types of house doors. Nearly twenty different models of these have been built and tried out in our laboratory. The best door we have found is a standard five-panel door, 80 inches high by 30 inches wide and $1\frac{3}{4}$ inches thick. The frame should be of dovetail construction in order to avoid warping and to withstand rough handling. Heavy hardware must be used if realistic sound is to be expected. On the opposite side of the frame from the door an acoustical baffle of 1-inch Celotex should be hung on hinges. By opening and closing this baffle, the door may be livened or deadened at will. This baffle may be removed and a screen door inserted in its place, giving

* A comprehensive list of manual effects commonly used will be found on pp. 311-314.

Horses . . .

. . . Horses

Murder



A pair of cocoanut shells gives the cloppety-clop of a horse on a hard road.

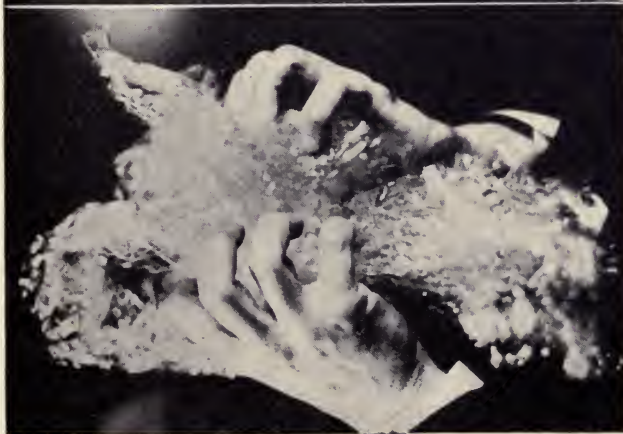


Two plumber's suction cups thumped on the chest sound like hoofs on turf.



Thrust a knife into a potato and you have a bloody stabbing on your hands.

Fire



The crackle of twisted cellophane can be an exciting four alarm blaze.

Suicide



When a body hurtles to the sidewalk, a squash provides that dull sickening thud.

Ghosts



Clack these wooden sticks together for the macabre illusion of rattling bones.

Moo



Squeezing water-filled ear syringes into a bucket sounds like a cow being milked.

Cake



For the sound of mixing a cake batter, all you have to do is mix a cake batter.

Crash



This can be the smashing in of a door or the crushing of a packing case.

Army



Dropping these wooden pegs repeatedly on a table makes a sound like a marching army.

Thicket



Twisting a bundle of straw means that something is astir in the underbrush.

Fight



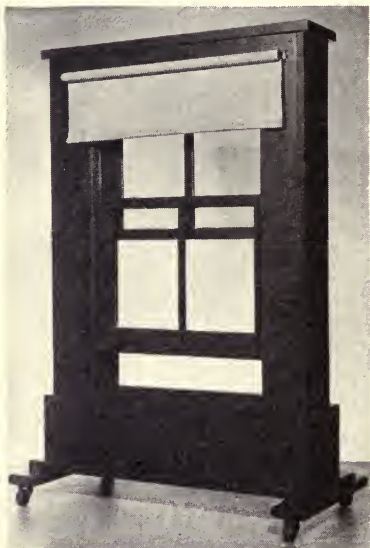
Paff! Zam! Zowie! Many a fight is fought by whacking this rubber sponge thus.

us a door of wide utility. The whole unit is mounted on rubber-wheeled castors for quiet portability.

We have tried all sizes of frames, weighted and unweighted, but found that there must be plenty of solid mass. Pine wood was not convincing, hence the use of oak. Do not try to combine doors with other effects, as this invariably results in cabinet resonance and undesirable extraneous sounds.



Heavy door equipped with baffle and screen.



Portable window effect with window shade.

Mr. Pierson is a good man to know when it comes to laying down the law on the construction of sound effects. He has this to say about windows.

Don't skimp on windows. Get a regular 2-by-4-foot light window with frame, sash, weights, and glass and mount it in a suitable pine frame. Be sure to fit it with all the customary hardware, blinds, and window shade.

Also, to make a water splash for swimming effect, lapping of water against a boat, etc.:

A square metal tub of heavy copper 20 by 12 inches deep should be made, or if this be too expensive, purchase a square galvanized washtub. Inside of this fit a canvas lining to keep the water from hitting the metal

walls. This is important, as water splashing against the metal does not give a true unconfined water effect, but would sound like a dishpan. A removable paddle wheel may be mounted horizontally, not vertically, in the tub to facilitate operation. Experimenting will show the great number of effects obtainable from various manipulations of this machine.

The number of manual effects that may be built to work successfully is limited only by the ingenuity of man. Sometimes the sound effects boys get off on strange tracks, but they get there because they are trying constantly to evolve new and better devices for improving the quality of the broadcast.

ELECTRICAL EFFECTS

Electrical effects as a whole are relatively rarely used. Small portable universal-type motors and rheostats are sufficient to reproduce the hum of motors and telegraph sounders, and high-frequency electrical tones are easily rigged up whenever there is occasion to use these sounds.



Splash effect.

RECORDED EFFECTS

By far the greatest number of sound effects used in radio drama are produced by using records of the sounds, playing them on consoles equipped with two and three turntables of variable speeds that are hooked up to a loud-speaker. As the sounds come out of the loud-speaker they are picked up by a microphone placed at a favorable distance. When the turntables are equipped with variable high- and low-pass frequency filters as well as variable-speed controls, a greater variety of effects can be achieved on any one record than are present when the same effect records are played on ordinary tables not so advantageously equipped. Subtle blendings of sound effects are possible by using one, two, and three records in combination, getting the proper balance among them and the dramatic accents of cross-fading one effect into another.

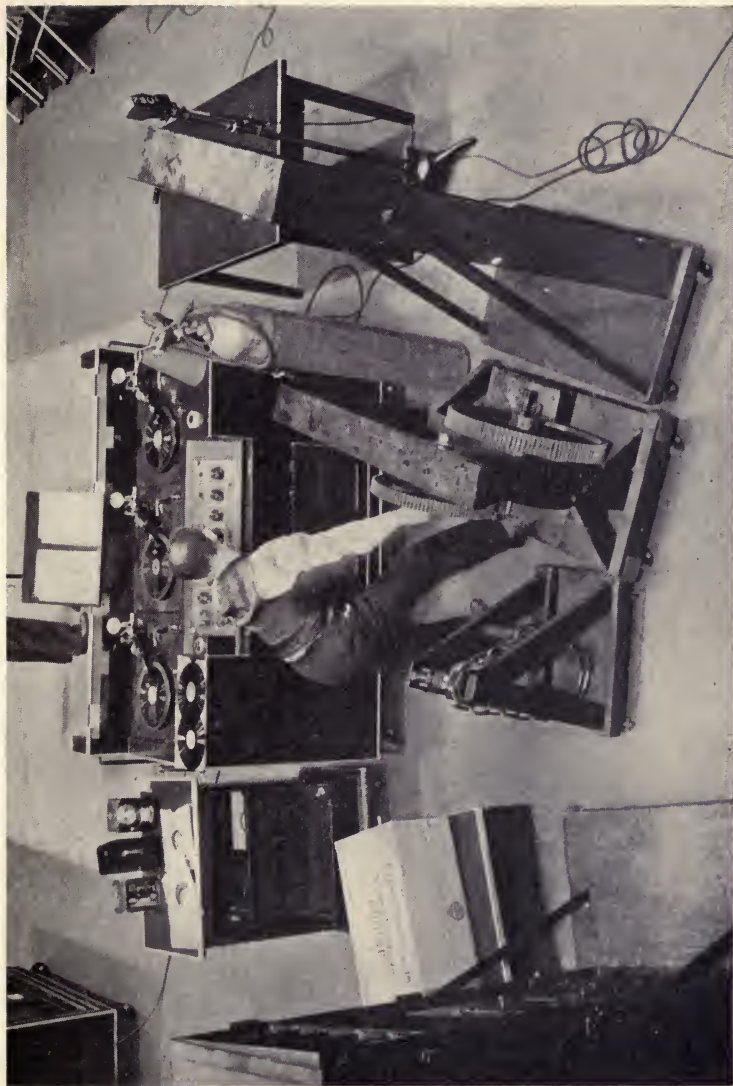
Many factors have contributed to the predominance of the record effect over the manual. Electrical recording has taken immense strides forward in the last few years, and the end of improvement is still in the far-distant future. Records have become more durable, and surface noise has been reduced to a point where it is apparent only to the ear of the expert listener. An immense library of sound effects records is now available, to a great extent because of the fact that no longer in making and recording the effect is there need to rely upon studio-created imitations of the real sounds. Now sounds are picked up on film and then are dubbed to wax, a practice that has widened the libraries immeasurably.*

SPOTTING RECORDS

When any single spot in a sound record is the sound the director wishes to incorporate in his show, the able sound engineer can mark that spot and hit it with amazing accuracy on cue. Inasmuch as each turntable is equipped with two pickup arms, the same sections of a record or an entire record can be played endlessly by simply picking up the spot with the second arm and fading the sound in to continue the sound as the first arm is finishing. Thus the same sound can be played continuously throughout an entire broadcast if necessary, an aural picture having its counterpart in the legendary snake with its tail in its mouth.

Within the last couple of years record-spotting devices have made their appearance, and it will probably be only a short time before they will have become perfected and made available at a modest price within the reach of the lowliest 100-watt station. These record-spotting devices are uncanny. The sound engineer picks out the exact spot in a record groove where he wants the pickup arm and needle to fall, sets a switch, and when he throws it the arm drops to the exact predetermined spot. As soon as the effect is finished, the same switch is thrown, the arm rises from the record automatically and is reset to the same spot. It is the work of a moment to set the arm to another spot on the same record or to other records.

* The reader will find on pp. 297-310 a partial list of some of the recorded sounds that are now available in commercial libraries and that may be purchased in the larger cities or by writing direct to the manufacturer.

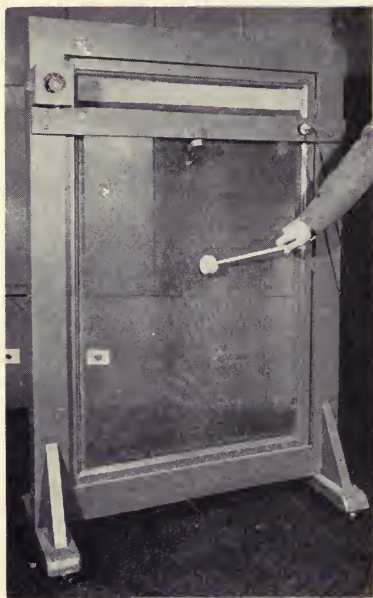


Sound effects operator working manual effect with one hand and three-turntable record-spotting device with the other.

AUDIO-FREQUENCY EFFECTS

Of the audio-frequency effects, the most popular is one that will presently become standard with every radio station in the country. Mr. Pierson is again my authority for its proper construction.

Stretch some copper window screening across a frame 4 feet long by 2 feet wide. An ordinary magnetic phonograph pickup is suspended several inches from the screen, and a small coil spring, soldered to the screen, is inserted in the needle hole. The output of the pickup should be run through a volume control and connected to the turntable amplifier and speaker. Striking the screen with tympani sticks will produce highly realistic thunder effect. Some experimenting will show additional effects that may be obtained from this simple piece of equipment, effects such as the booming of cannons, or a sustained background for heavy crashes and explosions.



Audio-frequency effect for thunder, explosions, battle sounds, etc.

ACOUSTICAL EFFECTS

Certain sounds change their characteristics to a certain degree depending upon the liveness or deadness of the studio, just as the brilliance of the human voice or the tones of an orchestra are changed by developing a proper balance between smooth wall surfaces and sound-absorbent wall surfaces.

By placing sound-absorbing screens or gobos at strategic places, the quality of the pickup of a sound effect can be altered, making it either live or dead. These gobos are 8 feet high by 3 feet wide and are hinged like two sections of screens, which is exactly what they are. One side of the screen is covered with monk's cloth, backed with hair felt, and the other side is bare wooden surface. By using these sound-absorbent screens, the

dramatic director is enabled to wall in a microphone and deaden the pickup to whatever degree he wishes, obtaining an accentuated intimacy between the characters.

ECHO AND REVERBERATORY EFFECTS

Where no echo chamber is available, an effective echo effect may be created by placing a dynamic microphone face downward in the hole of the sounding board of a grand piano. With the top of the piano half open and with a weight placed upon the dampening pedal to hold the strings continuously free, voice or sound effects can then be directed straight into the open piano. The strings of the piano will then vibrate freely, and the effect is of a curiously metallic, singing echo.

MUSIC EFFECTS

The last and often the most beautiful, effective, and haunting of sound effects are those produced orchestrally by imaginative musical arrangement. Such effects are possible when the director has working with him a musical director who is a composer as well as director and who, in addition, can sense the drama inherent in a scene and can translate that drama into music that will augment the acting and the writing. Bernard Herrmann, the gifted young American composer and staff conductor of the Columbia Broadcasting System, has done outstanding work in this field and some of the Columbia Workshop's most conspicuous successes have been due in large part to the invaluable contribution of Mr. Herrmann's original music and conducting.

Our concern at this point is with cue music, which, by its accent or rhythm, wholly or in part, takes the place of a realistic sound effect. An example of such an effect was illustrated in a broadcast produced by the Columbia Workshop, "The Devil and Daniel Webster," a short story by Stephen Vincent Benet, dramatized for radio by Charles Jackson.

Jabez Stone, a New Hampshire farmer who has mortgaged his soul to the devil and regretted the deed, visits Daniel Webster to ask him to plead with the devil to release him from the contract. Daniel, who has always had a soft spot in his heart for his neighbors, agrees to take the case, and since no time is to be lost—it being the very night on which Old Scratch is to come to exact his due—orders his servant to hitch up Constitution and Constella-

tion to the carriage. They are a pair of matched grays and step like lightning. The wild ride of the two men to Jabez' farm was a short, highly stylized scene graphically high-lighted by "ride"

THE DEVIL AND DANIEL WEBSTER

I - "RIDE MUSIC"

Bernard Herrmann

Allegro

Oboe

Trpt. Bb *MUTED*

Xylophone *ff*

Horns *tr* *Rite slap*

Violins I-II *pizz.*

Viola *pizz.*

Cello *pizz.*

Bass *pizz.*

II - "GHOST MUSIC"

Vibraphone

Bass

ff

ff

music composed by Herrmann. The horses' hoofs and the crack of the whip were the only literal sounds used to complete the picture. The scene was spread over about 50 seconds of length.

Later in the same play, after Daniel Webster has unsuccessfully tried every trick in his forensic repertoire to force the Devil to

recede from his strictly legal position, he demands a trial for his client before an American judge and jury. The Devil grants his request and summons for the purpose the ghosts of the most cruel and bloodthirsty ruffians in colonial history.

When the door bangs open and the wind whistles through the room, there is no doubt that the dramatic value of the scene would be heightened with an effect that would convey some sense of the ominous entrance of all this ghostly crew into the little New Hampshire farmhouse. Ordinary footsteps, harsh, mortal, realistic, would convey nothing of the fantasy implicit in the scene—in fact, would obliterate it almost entirely. The fragment of “ghost” music, the combination of the vibraphone and the bass violin, provided an eerie effect that heightened to a great degree the dramatic impact of the scene.

By accent, rhythm, and adroit instrumentation, interesting and telling musical effects attain a mood often beyond the reach of literal sound effects. Pare Lorentz, who prepared the brilliant documentary film, “The River,” and “The Plough That Broke the Plain,” brought his penetrating social awareness to radio in a broadcast by the Columbia Workshop called “Ecce Homo.” The program was effectively directed by William N. Robson, and a special musical score was written for it by Mr. Herrmann. His problem in this case was to convey to the listener musically the insistent mechanical beat of an assembly line against the hard pulsating recital of the nation’s industrial products. With such music played as a background to lines read with robotlike precision by the cast, its effectiveness as a sound device over almost any literal sound effect that might be worked out, can readily be seen.

The several types of sound effect having been pointed out, an examination of the place they have in dramatic production and the formation of a point of view concerning their use may be in order. What may be the criteria that should determine their effective use, and where may they be effectively omitted? The answer probably lies exclusively within the realm of each individual director’s feeling, understanding, and approach to the medium. One director may feel that successful radio drama is achieved when the drama is buttressed with realistic sound effects. And no doubt there will be a large body of listeners who will be thankful to him for having rounded out the picture so

completely for them, for having made no single demand upon their imagination beyond asking them to listen and be quiet. But besides these, there will be other listeners to whom every literal sound, every footstep, every slamming door, every rattle of

FACTORY MUSIC

ECCE HOMO

Bernard Herrmann

The musical score is for a large orchestra and includes parts for the following instruments: Flute, Oboe, Clarinet I, Clarinet II, Bassoon, Horn I, Horn II, Trumpet I, Trumpet II, Trombone, Timpani, Snare Drum (s.d.), Cymbals (cyl.), Piano, Violin I, Violin II, Viola, Cello, and Bass. The score is written in 2/4 time and features a variety of musical notations including rests, notes, and dynamic markings. The piano part includes markings for '8^{va} lower' and 'octaves'. The violin and viola parts include markings for 'tr' (trills) and 'cresc' (crescendo). The woodwind and brass parts include markings for 'tr' (trills) and 'cresc' (crescendo). The percussion parts include markings for 's.d.' (snare drum) and 'cyl.' (cymbals). The score is divided into measures by vertical bar lines, and the instruments are grouped by horizontal lines.

a five-and-ten-cent-store dish will come as an intrusion upon their listening faculties, an assault upon their patience. The director who directs exclusively for the latter will gain their prayerful thanks, but by the former he and his works will be cast into that

outer darkness that is so easily evoked by the flip of a switch or the turn of the dial.

A microphone cannot create the whole picture of life. Wondrous and magical gifts pour from the loud-speaker. It can give back

the sound of a voice that is far away, but in this year of grace can offer no substitute for the twinkle in a maiden's eye. The moment you try to push its boundaries beyond their natural limits you are committed to folly. Sound effects are a great temptation to a director because they offer a fine chance to impose upon a radio production a literalness that mere words alone cannot achieve; but let a director yield to the impulse to create one of the useless,

minor sounds of life for no reason other than to imitate it faithfully and he has his job cut out for him. What a temptation, for example, there is to put footsteps into a radio play! If one were to believe the radio producers, there isn't a house in the whole of the United States that can boast of having rugs or carpets on its floors; this is the most uncarpeted nation in the world. Board floors are mandatory not only in the mountaineer's shack in Tennessee but in my lady's boudoir on Park Avenue. And not only are they made of board, but when they are walked on they rumble down the wave bands like kettledrums. The best of radio writers throw countless directions for footstep sounds into scripts, no matter what the occasion, just as if they meant something of importance. It seems never to occur to many radio directors to skip past such nonsense and go on to something more important—the interpretation of the lines, for instance. Instead they must waste valuable time moving sound effects men in and out, up and down, and round about a mike, stamping like heavy-footed clodhoppers on a platform that rings like an empty pickle barrel.

Hundreds of useless sounds are written into radio scripts by writers, possibly because they have heard that by indicating plenty of sound effects, they will indicate at the same time that they know how to write for radio. The presence of sound effects in a script, however, should not be met with such slavish respect by the radio director. A character announces that she will dash off a note to Cousin Susan (sound of pen scratching on paper). Why is it that all pens in radio scripts are stub pens and make a terrific racket? Why must a script stand still while we hear an incredible sound, monumental and terrifying?

To a certain degree a microphone lacks discrimination. A dishpan falling on the floor and the same dishpan falling in a sink are one and the same dishpan making a clatter. There are directors who profess to discover subtle differences in the quality of two such clatters, and the writer who has cued various dishpan clatters will not dispute their claim, but that such differences have anything to do with a common-sense interpretation of a script, is certainly doubtful. An infinite number of sounds need the support of words to complete their meaning. They must be buttressed by adequate and rational context that supplies not only motivation for their use but in some cases even explanation

and identification. How often do we hear on a dramatic broadcast some strange thump that resists every effort to relate it to the *mise en scène*? We know it is a bump or a thump, but whether it is our hero hitting his head in despair against a stone wall or simply an actor kicking a microphone accidentally no one could possibly discover.

A sound effect should be so instantly recognizable or so rigidly and shrewdly prepared for or flow so naturally and realistically from the text that the listener accepts it without questioning the aesthetic justice of including it in the drama.

CHAPTER 3

PREPARATION FOR THE BROADCAST

Possibly the truest thing that can be said about any broadcast is that there is never quite enough time to do it as well as one would like. Because of limitations of time and studio space, almost every broadcast represents a slight compromise in some direction.

When it is considered that a network is on the air 18 hours a day broadcasting a new program either every 15 minutes or every half hour, it is not inconceivable that to carry out such a program there are hardly ever enough studios to go around. To assign studios to the different broadcasts and to allot to each program the exact amount of time that is necessary to get it on the air represents a kind of scheduling gymnastics that calls for a most skilled and diplomatic mind.

With rehearsal time in the studios at a premium, it is highly essential that the director enter the studio with as much of the work done in advance as he can possibly get done. Once he starts rehearsing he has no time to say leisurely, "I think we ought to rewrite this scene." Every scene must be within shooting distance of perfection. He cannot say, "Let's throw out this show. Let's get another," for such a procedure would be suicidal as well as fantastic. Nor can he say, "Let's throw out all this music. I want some new tunes." Within certain limits he might decide to have one new tune, very possibly two, but the revision would end there if he wanted to have a broadcast of high quality.

COPYRIGHT CLEARANCE

To begin with, a broadcasting company does not broadcast what it has no right to broadcast. In music, in drama, in books lies a valuable copyright, a vested property right, and a company may not avail itself of copyrighted material without following the rules that are laid down to determine how such copyrighted material may be used.

In the field of music, a knowledge of what is broadcastable under existing copyright laws of this country and all other civilized countries is a highly complex and technical business that calls into play the talents of experts in that field. Every network maintains a staff of such experts whose duty it is to examine the material that is submitted to them in advance of the broadcast to determine what may be broadcast free of charge and what must be paid for and, if it is to be paid for, with whom to negotiate for the payment of the right to broadcast it.

It is not enough to assume that because a single and homely tune is seemingly part of the folklore of the nation it may be played without inspection for possible existing copyright. Numerous copyrighted arrangements of simple folk tunes are in existence, and the version that is played without proper copyright clearance may expose the network or station to an action for damage for violation of the copyright. Do not glibly assign material, whether it is music or literature, to the "public domain" just because it ought to be there or because it suits your convenience to have it there. Where work that may be subject to statutory copyright has been published without compliance with the copyright act or where the term of copyright protection has expired, it is free to the use of all who may wish to avail themselves of it and is said to be in the "public domain." Stories and novels, however, belong to the author, and he retains the right to dramatize or adapt such works. Before making an adaptation or broadcasting an adaptation of them, arrangements should be made with their author or owner. No portion of a stage play may be adapted or included in its original form in a radio dramatization without the specific permission of the copyright owner. The copyright act of 1905 does not prevent the broadcaster from reading a published and copyrighted poem, but it may not be set to music, nor may it be dramatized.

It is essential that the rights be cleared to any and all music. Even if the music is in manuscript and has not been published, permission in writing to perform it on the air must be secured prior to the broadcast from the holder of the rights. There is a vast catalogue of music made up of numbers written by hundreds of composers and published by many firms. The performing rights to this music is in the hands of the American Society of Composers and Authors. To the many radio stations subscribing

to their catalogue the society grants for a fee the right to play any of the numbers contained in their catalogue lists. Copyrighted music owned by publishers or composers not members of ASCAP must be negotiated for separately and for each individual performance.

ARRANGEMENTS FOR MUSIC

If you are about to go on the air with a broadcast of a drama in which music plays a part, consult with the leader of the orchestra before rehearsal. If he is a musician gifted with a sense or awareness of the nuances of drama, you are fortunate, but frequently you will find that his sole equipment for a dramatic broadcast is the use of a forthright downbeat. With few exceptions professional musicians go from the cradle to the grave untouched by even the faintest consciousness of the magnificent dramatic implications of the stuff they deal in. They are so absorbed in their craft that they seem never to relate it to other art forms, and if they do they are slightly ill at ease once the juncture has been made, as if they fear they cannot quite live up to what is expected of them. Make sure that you confer with the orchestra leader so that you may select with him the numbers or cues that you think will best fit into the situations in the drama. Speaking generally, music on the dramatic broadcast may be used:

1. As a framework or theme, marking the general outline of the show or supplying an identification factor.
2. As a device to carry the scene of action from one sequence to another as a "bridge" of time, place, or mood.
3. To "back" (play softly behind) a scene and enhance it by creating or intensifying a mood.
4. To appear in a scene realistically as a part of the dramatic scene or story.
5. As an arbitrary studio device to cushion a show in the event that the running time of the drama does not completely fill the broadcast period. The music in such a case simply opens the show appropriately and closes it in the same manner.
6. As a sound effect.

In conferring with the orchestra leader, discuss any and all problems of the show that have to do with or depend upon music. If a theme is to be selected, indicate what is required and let him

play or have played for you one number after another, or section of a number, until he hits upon one that is perfect for your needs. A theme should be distinctive, readily identifiable, and should frame or set the show in the general over-all mood or manner that it is your intention to create. Find out from the production director the number of men and the make-up of the orchestra, and remember that the music that is selected must fall within the limitations of the orchestra that is going to play the show. If it is a stringed orchestra, make sure that the music you select is scored for a stringed orchestra, and do not ask for music that calls for brass instruments when you have no brass instruments. Remember, then, that the music that you select for your show will be limited by the extensiveness of the music library you have at your disposal, the make-up of the orchestra you have for the broadcast, and the amount of orchestra rehearsal time scheduled for the show. Do not pick out numbers that require lengthy rehearsal when the orchestra rehearsal time is limited. If you know exactly what numbers you will need for dramatic bridges, order them for the show in advance, but you may find it more expedient to order a comprehensive and representative group of numbers from which you can make your selections during rehearsal. When there is a question in your mind what music best fits a given situation, if you wait until rehearsal and try out a few numbers against the reading of the cast, the doubt may be cleared up and the selection of the correct music simplified.

If your show requires vocalists, order them well in advance of rehearsal so that they may have special coaching if such coaching is necessary. When you have enough money in the budget to permit the luxury of having music written especially for the show, make your needs known far enough in advance so that the job will be done properly. Specially composed or arranged music is expensive and takes time to get ready. Do not leave arrangements for music to chance or to a naïve faith that all you need do at a rehearsal is to ask a leader for exactly what you want and he will produce it for you by simply waving his stick.

REHEARSAL TIME

It is necessary to estimate from inspection of the script the exact amount of rehearsal time necessary to get the show on. The guess must be accurate because rehearsals cost money. The

length of time necessary to rehearse the show before the orchestra appears on the scene to take over and get ready in its part must be estimated. The rehearsal periods of actors, singers, and musicians should be arranged and planned carefully in advance in order to get the maximum amount of benefit from their efforts. When such groups are scheduled in such a way as to permit them to stand about, becoming tired, restless, and inattentive, it is unreasonable to expect from them a live, fresh, slick performance. It is difficult for the fatigued artist ever to be better than adequate.

SCHEDULE OF SALARIES

Classification of artists	Length of programs and minimum rates		
	15 minutes	30 minutes	60 minutes
New York and national network rates:			
Solo singers and actors.....	\$17.00	\$21.00	\$25.00
Duos, trios, quartets, per person.....	12.00	15.00	18.00
Groups of 5 or more singers, per person....	11.00	13.00	15.00
Chicago local and regional rates:			
Solo singers and actors.....	12.00	15.00	18.00
Duos, trios, quartets, per person.....	10.00	12.00	15.00
Groups of 5 or more singers, per person....	8.00	10.00	12.00
Los Angeles local and regional rates:			
Solo singers and actors.....	10.00	12.50	15.00
Duos, trios, quartets, per person.....	9.00	10.00	12.50
Groups of 5 or more singers, per person....	8.00	9.00	11.00

Formerly directors could take as much time as they wanted to put on a show of any length, limited, of course, only by the amount of studio time available. The busier and better actors simply refused to make guinea pigs of themselves while indecisive and uncertain directors tried out effects and made tentative interpretations of the script. Shows that any competent director should have produced as well or better in half the time have been known to be rehearsed 12 and 14 hours. But marathon directing is an indulgence that must now be paid for. Unionization of actors and singers under AFRA (American Federation of Radio Artists) has brought about contracts with the networks covering

the length of rehearsal and payment for overtime rehearsal of the sustaining broadcasts, and similar agreements providing a scale for rehearsals and overtime have been made with the advertising agencies covering the commercial shows. The table on p. 44 is the schedule of salaries in force between the networks and AFRA, covering the sustaining broadcasts.

REHEARSAL PERIODS: The company shall be entitled to actors' and singers' services for rehearsals without additional compensation, as follows:

	15-minute Broadcast	30-minute Broadcast	60-minute Broadcast
Actors.....	2 hours	6 hours	8 hours
Singers.....	1½ hours	2½ hours	3½ hours

Rehearsal for a quarter-hour broadcast shall be in one session, which may be on a day other than the broadcast day.

Rehearsals for a half-hour or an hour broadcast shall each be held in not more than two sessions, one or both of which may be on a day or days other than the broadcast day.

The fee for overtime rehearsal is at the rate of \$4 per hour.

COMMERCIAL SCHEDULE OF FEES

Under the Code of Fair Practice the schedule of minimum fees and conditions for radio artists appearing on commercial programs using the facilities of the National Broadcasting Company, the Columbia and Mutual Systems, and their several stations is, in part, as follows.

Length of Program	ACTORS	
	Fee	Rebroadcast Fee
15 minutes or less	\$15.00	\$10.00
16 to 30 minutes	25.00	12.50
31 to 60 minutes	35.00	17.50

Rehearsal: \$6 per hour, first hour required; after first hour, rehearsal may be computed and paid in half-hour periods at the rate of \$3 per half hour or part thereof. Rehearsal for programs in excess of 15 minutes may be held in two sessions, each session to be computed and paid for as a separate unit, and no such session shall be computed as less than 1 hour. Individual compensation shall be on the basis of time contracted for, but additional rehearsal time may be requested and, if agreed to, paid for.

SINGERS

CLASS 1. GROUPS OF 9 OR MORE VOICES:

Length of Program	Fee	Rebroadcast Fee
15 minutes or less	\$14.00	\$ 7.00
16 to 30 minutes	16.00	8.00
31 to 45 minutes	18.00	9.00
46 to 60 minutes	20.00	10.00

Rehearsal: Orchestra and all coaching rehearsal \$4 per hour, first hour required; after first hour, rehearsal may be computed and paid for in quarter-hour periods at the rate of \$1 per quarter hour or part thereof.

CLASS 2. GROUPS OF 5 TO 8 VOICES INCLUSIVE:

Length of Program	Fee	Rebroadcast Fee
15 minutes or less	\$24.00	\$ 8.00
16 to 30 minutes	28.00	10.00
31 to 45 minutes	32.00	12.00
46 to 60 minutes	36.00	14.00

Rehearsal: Orchestra rehearsal \$4 per hour, first hour required; after first hour, rehearsal may be computed and paid for in quarter-hour periods at the rate of \$1 per quarter hour or part thereof.

CLASS 3. GROUPS OF 2 TO 4 VOICES INCLUSIVE:

Length of Program	Fee	Rebroadcast Fee
15 minutes or less	\$30.00	\$10.00
16 to 30 minutes	35.00	12.00
31 to 45 minutes	40.00	14.00
46 to 60 minutes	45.00	16.00

Rehearsal: Orchestra rehearsal \$5 per hour, first hour required; after first hour, rehearsal may be computed and paid for in quarter-hour periods at the rate of \$1.25 per quarter hour or part thereof.

CLASS 4. SOLOISTS:

Length of Program	Fee	Rebroadcast Fee
15 minutes or less	\$40.00	\$15.00
16 to 30 minutes	50.00	17.50
31 to 45 minutes	60.00	20.00
46 to 60 minutes	70.00	22.50

Rehearsal: Orchestra rehearsal \$6 per hour, first hour required; after first hour, rehearsal may be computed and paid for in quarter-hour periods at the rate of \$1.50 per quarter hour or part thereof.

With the increase in cost of rehearsal time of actors that runs over the allotted number of hours and with the added expense

that is involved if orchestras are rehearsed longer than is provided for in the budget, it is vitally necessary to enter the studio with everything that may be done in advance of rehearsal arranged for or completed. Such preparation means primarily that the script itself should be in almost completely broadcastable form—"almost," because a small allowance should be made for those necessary changes that take place in the course of rehearsal as a result of directional correction and interpretation. But the great bulk of the script—98 per cent of it, let us say—should be ready, finished, studied, corrected, and, lastly, have been typed, mimeographed, or dittoed, and made up into as many copies as will be called upon for use in the course of putting on the broadcast. Since it is never possible to guess exactly how many this will be, it is advisable to make sure that there are a good many more than enough. There will be no time to rewrite scripts once rehearsal has begun. If motivation, plot, characterization, background, purple passages of style, rhythmic interludes, delicate intimations of class struggle—any of these—are absent as rehearsal begins and they seem essential, it may be extremely difficult if not impossible to evoke a convenient muse when the clock says it is time to be moving along. Make sure, then, that the script is ready *before* you go into rehearsal.

Make sure in advance of rehearsal that all the physical equipment of putting on your show will be available. Order the necessary studio or studios well in advance.

In planning your broadcast, think clearly into the future and try to foresee everything you are going to need. If you are going to invite sixty guests to the broadcast, arrange for sixty chairs for them to sit on. If you fail to mention to the proper persons that you expect sixty guests, do not be surprised that the business of rounding up sixty chairs at the last minute can be a noisy and disconcerting business that can transmit itself to the show you are putting on and in the end make for an unsettled broadcast.

In broadcasting stations where a reverberation or echo chamber is part of the equipment, it is the practice to schedule it for use just as any studio is scheduled. Sometimes the decision to use such a chamber is not made until rehearsal is well advanced, but more often examination of the script before rehearsal will indicate that there will be need of one.

Make sure that a copy of the finished script is sent well in advance to the sound effects department. It is common station practice to send automatically, as a part of office routine, at least two copies of all dramatic scripts to the sound effects department. In this way the head of the department may look at the script and determine from the cues written into it the number of sound effects operators that will be required to produce the show. Experience enables a director very quickly to judge the number of operators he will need on a broadcast. If a sound pattern in a drama is so complicated at any one spot in the script that one man is not equipped with sufficient hands or feet to create all the sounds that the script requires of him, a second man is needed. Experience and common sense will also enable a director to examine manuscripts and decide often that they are too heavily burdened with sound effects. He will then cut superfluous effects, thereby lessening the burden on the sound effects department, quite possibly enhancing the value of the script, and undoubtedly heightening the enjoyment of his listeners.

If, from an inspection of the script, it is discovered that an unusual sound effect is necessary to the well-rounded and artistic production of the show, experiment should be made in advance of rehearsal with the experts of the sound effects department. "Unusual" takes in any sound outside the regular stock equipment of available sound effects, manual or recorded. Sound engineers are invariably able and imaginative craftsmen at their business. They are men to whose skill a new sound represents a challenge, and they will experiment endlessly, trying one new effect or combination of effects after another until they can produce a verisimilitude that will satisfy the most exacting director. Only let them know in advance what is wanted, and they will move heaven and earth to see that it is produced. Occasionally it happens that unusual or complicated sounds or sound patterns form the very basis or dramatic premise upon which the whole broadcast is predicated. In such cases do not hesitate to set up a studio rehearsal in advance of the cast rehearsal, and rehearse or experiment with these patterns until the desired results are obtained. In this way you may try out any number of sound effects, rejecting those you do not want. If the pattern of sounds requires careful balances of sound perspectives and equally careful cuing to the sound effects engineers

of the succession of effects, much time may be saved by such advance experimental rehearsals. Advance experimental rehearsals have one slight drawback. As the discussion of sound technique progresses, we shall see that the presence of the actor or actors around whom the sound pattern is being built is necessary in producing accurate perspectives. Consequently the perfect advance experimental rehearsal would require the performers' presence, and, when the cast is made up of professional actors, this requisite would add to the cost of the program. If your budget will permit this luxury, by all means avail yourself of it. If it does not, use as stand-ins technicians working with you on the experiment; or, lacking these, build the sound patterns and perspectives to as close an approximation of what you hope to achieve on the broadcast as you can, and make whatever alterations you need when you come to the cast rehearsal. Control-room engineers are usually assigned with the studios as a matter of routine.

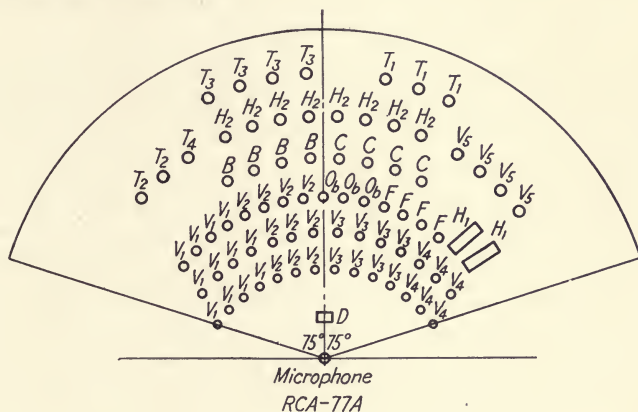
Announcers are also assigned to scheduled broadcasts and appear at the studio a short time before the program goes on the air. If, however, you need the services of the announcer for the dress rehearsal, if you need to rehearse him in the same way you need to rehearse an actor, if he is an integral part of the timing of your show, if his interpretation is an important part of the general tone of your drama—in other words, if you need him for any reason other than the reading of a standard or perfunctory announcement at the opening and close of your show, arrange for his appearance at your studio at the time you want him, at the time when he fits into your rehearsal plan. If, for any given show or audition, you want one announcer rather than another, request his services in advance so that his schedule may be altered to suit your needs. Certain announcers fit one show better than others. There are vast differences among announcers in tone, temperament, pitch, and mental attitude toward the job at hand. Announcers become identified with certain types of program to the point where a severe aural and aesthetic wrench occurs when one hears them announcing another type of program. Announcers in many cities are unionized, and the number of hours per week that they may work without running into overtime is carefully laid out. This, too, is a consideration in securing their services for any given type of show. So, I

repeat, at the risk of sounding monotonous, be sure to make appropriate arrangements in advance for the services of the announcer you need for your show.

ORCHESTRAL SETUP

Whenever the music of an orchestra is picked up on a microphone under normal broadcasting conditions, the instruments that make up the ensemble must be "balanced," that is, they must be placed in certain strategic positions with relation to the position of the microphone and with relation to the other instruments that make up the orchestra. It should be borne in mind that in the ensuing discussion of orchestral balance, the physical proportions and acoustic properties of the studio have a direct bearing on the arrangement of the orchestra and the placement of the microphones. The creation of perfect orchestral balance is largely a resultant of a series of adjustments to a set of fairly standardized orchestral patterns. For a good many years, before a microphone was even thought of, the seating pattern of the modern symphony orchestra was basically standardized except for minor changes to suit the taste of different conductors. This director might have liked his cellos in front of him; that one preferred them over to the right. But the standard symphony setup required the stringed instruments to be placed nearest the auditor, the wood winds behind them, the brasses next, the string bass and percussion instruments (drums, tympani, etc.), behind them all. The greater the normal volume of the instrument, the greater the distance away from the auditor would it be placed. The same basic setup is used when the sounds of the orchestra are to be picked up by the microphone and transmitted to the loud-speaker. The microphone picks up indiscriminately all sounds that fall within the area of sensitivity. In order to pick up each section or choir of the orchestra in such a way as to reproduce that section in its proper tonal relationship with the rest of the orchestra, it must be placed the correct distance from the microphone, at an angle that will be favorable to it without impairing the pickup of another section. To repeat, the standard symphony setup prevails. The stringed instruments are nearest the microphone, the wood winds are behind them, the brass instruments behind the wood winds, and the string bass and percussion instruments are farthest away.

The following diagram shows a single microphone (RCA uni-directional 77-A) arrangement for a symphony orchestra of seventy-five musicians.



L E G E N D

D-Director
M-Microphone
B-4 Bassoons
C-4 Clarinets

F- 4 Flutes
*H*₁- 2 Harps
*H*₂-8 French
 horns
*O*_b- 3 Oboes
*T*₁- 3 Trumpets

*T*₂- 2 Tympani
 and traps
*T*₃- 4 Trombones
*T*₄- 1 Tuba
*V*₁- 12 First violins
*V*₂- 10 Second violins

*V*₃-8 Violas
*V*₄- 6 Cellos
*V*₅- 4 String bass
Total 75 Musicians

Orchestra setup utilizing RCA 77-A.

With any such setup as that portrayed in the diagram, it should be borne in mind that before the pickup will be the best possible under the conditions, many small adjustments must be made. These may be made in altering slightly the distance of the microphone from the first row of musicians, or the height of the microphone above the floor. The seating arrangement of the individual musicians on the stage or platforms may be altered, that is, one section may move slightly forward or back, to the left or to the right. To the unpracticed ear such minor adjustments may seem unwarranted, but the discriminating listener can very easily detect inaccurate or slovenly balance. Not only will he detect poor balance, he will resent it on aesthetic grounds and be completely within his rights. It is the duty of the director or the production man to see that orchestras are properly balanced, whether they are the full symphony or the six-piece string ensemble. All adjustments or corrections of

balance should be based on what the orchestra sounds like on the monitor speaker in the control booth. Listen to it, change, and listen again. If the balance is correct, let it stand, but if it is not, make those changes that will correct it, and again listen to see if the changes are the necessary ones.

The Sunday afternoon broadcasts of the Philharmonic Orchestra have long been a source of pleasure to millions of listeners. No small contribution to the perfection of the programs has been the exacting attention paid to every single detail involved in their production by the Columbia engineering staff and James Fassett, the director in charge of the broadcasts. In addition to a comprehensive background of production knowledge, Mr. Fassett brings to the task the equipment of an understanding musician. He assisted Philip Hale by writing music criticisms for the *Boston Herald*, covering the Boston symphony concerts, song recitals, etc. On winning a scholarship to pursue musical studies, he devoted his time to private study and presently accepted a position as assistant to H. T. Parker on the *Boston Transcript*. He spent three years writing reviews and special articles on music. He came to CBS in the winter of 1935-1936 as a production man specializing in the Philharmonic and serious music broadcasts. Besides producing the Philharmonic broadcasts, he is now assistant director in the Columbia Music Department. Mr. Fassett has prepared the following discussion of the problems involved in the production of the Philharmonic broadcasts and the manner in which they have been met.

The acoustics of Carnegie Hall are such that it is difficult to get a really *bad* pickup of a large symphony orchestra. But a trained ear can easily distinguish between an excellent pickup and a good one. A proper balance between the various choirs of the orchestra must be obtained first of all, and it is taken for granted that this requisite will never fall below the level of excellence. The quality of sound which issues from a radio or speaker may vary somewhat from day to day when all controllable elements remain the same. During two different performances of the same program, listened to by you on the same speaker fixed at the same level, played by the same players in the same position, and picked up by microphones which have not been moved, the actual or apparent quality of sound may often be quite different. This difference is due to various uncontrollable elements—some of them objective, such as climatic conditions or the general quality of playing

at any specific performance—some of them subjective, such as your own mood at the moment or the condition of your digestion.

But the variables which may be and are controlled by the engineer and director of the Philharmonic broadcasts are:

1. The position, type, and number of microphones.
2. The position of the players on the stage.

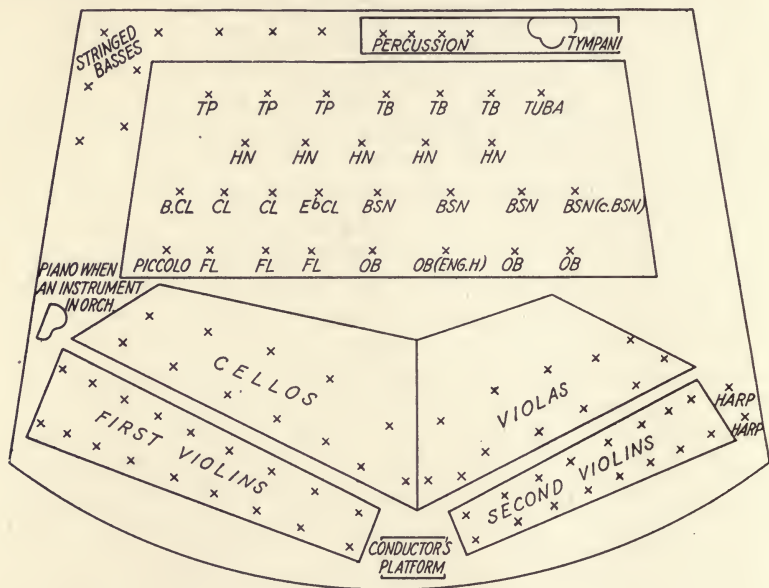
A change in orchestral setup, *i.e.*, the position of players, and the use of platforms may be compensated for by altering the position of the microphones.

Generally speaking, there are two types of pickups from Carnegie Hall: an intimate pickup, which results in very clear definition of the various instruments but in loss of sonority and brilliance, and a distant pickup, which stresses the bigness and color of the whole orchestral ensemble. Both these types of pickup have been used in the past in broadcasting the Philharmonic concerts. At present, however, a mean between these two types is employed, and the results have been generally agreed upon by discriminating listeners as the best possible in the present stage of radio development. The definition of instruments remains: the loss of overtones is kept at a minimum; the sonority of the orchestra is transmitted to the speaker. This pickup approximates as nearly as possible the sound of the orchestra as it is heard in a favorable position in the hall itself.

During the current season, two velocity microphones are suspended from the ceiling at a distance of 12 feet from the apron of the stage, and 15 feet above the floor. The microphone on the left (facing the stage) hangs above the fourth seat in from the left aisle and faces almost vertically toward the first violin section. The first violin, cello, and bass sections are picked up on this mike, although, practically, the wind choirs are also satisfactorily transmitted. The microphone on the right is suspended at the same height and approximately the same distance from the stage, directly over the fifth seat in from the right aisle. It is facing the center of the wood-wind section, and tipped at an angle of about 60 degrees to avoid an overemphasis of the tympani and other percussive instruments. In this way the middle string sections and the wind instruments are picked up.

When a vocal or instrumental soloist appears on the broadcasts a third microphone is needed. This microphone is suspended from 10 to 15 feet above the floor directly behind the conductor's platform and faces the soloist at an angle of 60 degrees or less. The distance of this microphone from the stage varies from 5 to 10 feet, depending on the voice or instrument and on the tone produced. The solo microphone is blended mechanically with the orchestra microphones in the control booth, adjusted at the discretion of directors and engineer. During a

solo cadenza, the orchestra mikes are shut off completely to avoid possible distortion.



SOLO MIKE

ORCH. MIKE

ORCH. MIKE

L E G E N D

FL - Flute

OB - Oboe

ENG.H - English horn

B.CL - Bass clarinet

CL - Clarinet

BSN - Bassoon

C.BSN - Contra-Bassoon

HN - French horns

TP - Trumpet

TB - Trombone

Setup for broadcasting Sunday Philharmonic Concerts.

(The microphones used at present are three 44-BX RCA Velocities strapped for voice. Various types of microphone have been used in the past. The most satisfactory single-mike pickup was found to be a 77-B uni-directional, suspended 17 feet over the third seat directly

behind the conductor's platform. This method was given up two years ago in favor of the present multi-microphone pickup.)

In the control booth, every effort is made to transmit the music to the air audience as it is heard in the hall by the visual audience. It is frequently necessary, however, to alter mechanically dynamic changes as the music is being played. But any guided manipulation by the engineer, instead of distorting the performance of the orchestra, actually aids in obtaining fidelity of transmission. Certain loud passages as they are played on the stage, if transmitted faithfully, would result in a noisy blast on most radio sets: or, in the case of a triple pianissimo passage, might not be heard at all. Both these extremes are brought by the engineer within a maximum and minimum volume range limited by readings of his volume indicator.

The delicate job of the director or production man is to warn the engineer at exactly what moments the volume be decreased or increased and to have these alterations imperceptible to the listener. If the utmost caution is not used, a crescendo or diminuendo can easily be ruined. For instance, the climax of a long crescendo as it is played by the orchestra must coincide exactly with the peak of volume as it is heard on the air. If the operation is not handled carefully the peak may occur before the actual climax, or if too much of a decrease of volume is made at any point, a sudden decrescendo may be heard instead of a gradual crescendo. The reverse can happen when a long diminuendo is being played. In the case of a sudden dynamic change from a soft passage to an abrupt *sforzando* chord in the brass and tympani, for instance, the volume must be decreased a split second before the smashing chord is played—and, contrarily, a very low passage occurring between two heavy or normal ones must be “lifted” at exactly the right moment. For example, in the last movement of Tschaikovsky's *Pathétique* Symphony, a tam-tam is struck very softly at a moment when all other instruments are silent. When Mr. Barbirolli conducted this work at a non-broadcast performance, it was found that the tam-tam did not move the volume indicator and consequently would be inaudible to the air listeners on the Sunday broadcast. The place was accordingly marked in the score, and the volume was “lifted” very slightly during the actual broadcast. The effect heard by the radio audience was the same as that heard in the hall, but it was made so by a mechanical alteration in the control room.

To obtain the utmost accuracy in giving these warnings, the director or production man is equipped with scores both at the broadcast and at the Thursday, Friday, or Saturday performances, which serve him as rehearsals for the broadcast. During these rehearsal broadcasts, he is able to judge how to treat the Sunday broadcasts, and he has his own system of marking the scores at the exact points where alterations must be made. An arrow pointing down (——↓) indicates that the

volume must be decreased at that moment a certain number of decibels, the exact amount being agreed upon beforehand and indicated in the score. An arrow pointing up (——↑) means a lifting of volume, and an arrow pointing both ways (——↑↓) signifies a return to normal level. A long arrow (————↓) covering sometimes two or three pages in the score means a very gradual decrease in volume caused by a crescendo, the climax of which is too heavy for transmission purposes.

A study of the picture of the setup for the Raymond Paige orchestra at Columbia's Radio Playhouse will give a good indication of the placement of musicians for proper microphone balance. It will be noticed that the strings occupy the forward part of the stage, that the lighter wood winds have the first row behind them, followed by the heavier wood winds, the saxophone section, and finally the brass. It was necessary to build a platform for the percussion section much larger than that used by the average radio orchestra, employing as many as four vibraphones and four xylophones in a single composition. The over-all pickup was accomplished with one microphone, type 44-B. This microphone is located in the lower left-hand corner of the picture, suspended by guy wires, and actually placed so that its beam falls directly in the center of the orchestra from well back in the house. Directly to its right, also suspended by guy wires, is a bullet microphone (darker in color) of the type 77, the uni-directional microphone with a wide angle pickup. At the time the picture was taken, George Zachary, director of the program, was still experimenting with both types. It was found that the 77 gave greater definition and sharpness of delineation to the music, but the 44-B was retained because the playhouse was not sufficiently "live" (did not have sufficiently reverberative acoustics) to give brilliance to the orchestra. The 44-B, since it provides a bi-directional pickup, brings in more of the reverberation from the house itself behind the microphone. This single microphone pickup was found to be best because it provides a minimum of distortion and a maximum of clarity in balance.

Only one other microphone was used for the orchestra. This was a microphone on a tall rod directly above the string section (indicated to the left of the conductor), to bolster up the string pickup when the rest of the orchestra was unusually heavy. It was found to be undesirable to use this string microphone



Raymond Paige's Orchestra.

except as a safety valve to enhance volume, since it introduced elements of distortion.

The other microphones represented in the picture were for specific purposes; one for the chorus at the extreme left, one for the soloist—lower left—one for the announcer—lower right—and one for the sound effects directly in front of the percussion stand. This microphone was used only when special effects were introduced. The cabinets on the percussion stand contained tuned auto horns employed in Raymond Paige's musical traffic scenes. The small oblong box directly behind Mr. Paige's stand contained three colored lights, which made it possible to keep him aware of time and orchestra balance without the use of hand signals. Later on it was found necessary to move the singer to the announcer's microphone on the right-hand side because there was too much spill-over of sound on her microphone from both the strings and the chorus to allow for suitable control.

The speaker on the roof of the control room (upper left) was connected to a microphone that Mr. Paige used during rehearsals because it was found that in treating with an orchestra as large as this one, he could not be heard by all the men. It will be noted that there are eight flute players, four oboes, eight clarinets, four bassoons, eight saxophones, and fifteen brass instruments (originally seventeen). On this program, Ninety-nine Men and a Girl, this was undoubtedly the first orchestra to be heard on the air to employ so vast and unusual a musical combination, making possible tone colors and mass effects hitherto unheard in popular music.

The directorial staff of the Mutual Broadcasting System constantly advances the standard of radio production. The level of excellence of this network's programs is consistently high, in part because of the willingness of Mutual's directors to work out novel and arresting production patterns which have about them a finish that make them extremely "listenable." The following notes on the production of WOR musical programs were prepared by Robert Lewis Shayon.

1. MUSICAL SHOWS

A. *Jazz Orchestra.*

The broadcast discussed is the Morton Gould show. This is a big jazz orchestra playing highly complicated and tricky arrangements of

modern popular music. Theoretically, it was reasoned, one microphone should be used to simulate the one ear, or set of ears, with which a person listens. Modifications were made immediately, as is general, with the addition of a separate mike for the vocalist, to give control over his volume in relation to the orchestra and with the addition of a separate mike for muted brass figures. One mike for the orchestra still proved unsatisfactory, because, unlike symphonic music, dance arrangements call for quick change to every section of the orchestra and a clean

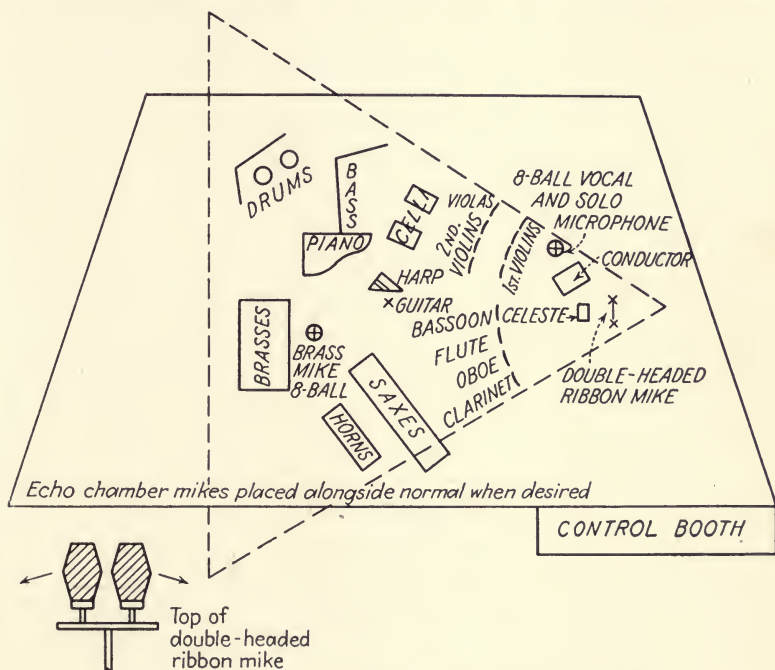


Diagram of Morton Gould orchestra setup on WOR.

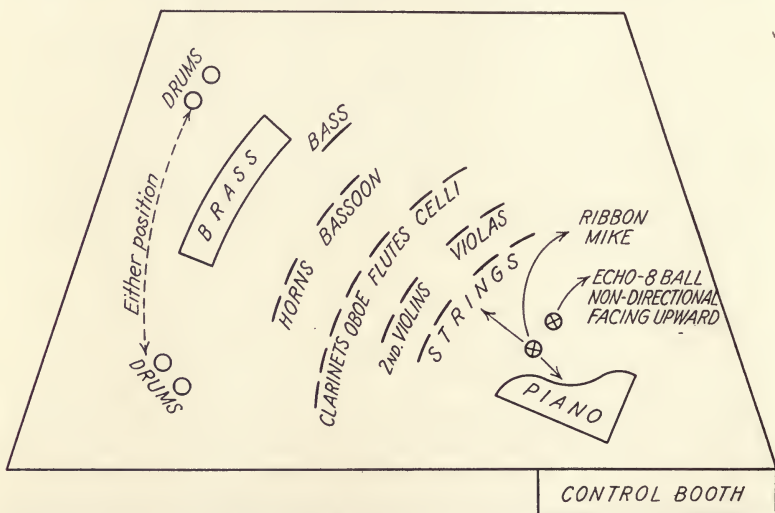
pickup of delicate yet important figures. Because the softer quality of the RCA ribbon mike, "strapped" for music, is preferred for the over-all tone on this show, the problem was how to give strings, wood winds, and saxophones an even shot at the mike and still keep from splitting up the orchestra too much and losing the effect desired. This was solved by rigging up a double-headed ribbon mike, that is, two ribbon mikes side by side on a fixed bar, capable of swinging from side to side and down and up, yet feeding into one mike position and one fader. This mike is placed at the apex of a triangle, with wood winds and saxophones behind them on the left side of the triangle, strings, and, behind them, cellos, on the other side of the triangle. Brass are placed at the

base of the triangle with their mike directly in front of them (about 5 feet). Drums, bass, piano, harp, and guitar form a rhythm group on the right side, and horns on left (see diagram). Celeste, when it is used, is right up under the double-headed ribbon mike. This set, with conductor at apex of triangle, allows complete visibility—gives wood winds and strings equal shots at the mike and yet keeps the orchestra from being too far spread out. Solo instrumental spots are taken on the vocalist mike.

For different effects on this show, "echo" chambers are used, one on the vocalist mike and one on the orchestral, sometimes on the brass. Echo spots are scored into the music; they have never been used for vocals. On several occasions they have been used for spots in trick announcements. Care is taken to face the whole setup into deadest side of studio and to blanket the orchestra mike, bass, and drums with gobos to kill any kickback and reverberation.

B. Symphonic Orchestra.

On regular shows one ribbon microphone and conventional setup is used. An "echo-chamber" mike has proved satisfactory in several



WOR Symphony Orchestra, Alfred Wallenstein conducting—Nadia Reisenberg, concert pianist.

instances, giving reverberation—time-lag quality—which is expressed in importing a "music-hall" tone to the orchestra—a feeling of distance—and a more sonorous, brilliant tone. When used, the echo mike, either eight-ball or salt-shaker, is placed alongside the normal mike.

An interesting production setup is exemplified in the series of piano concertos with full orchestra, featuring Nadia Reisenberg, concert pianist with the WOR Symphony Orchestra, Alfred Wallenstein conducting.

The problem here was how to utilize one ribbon mike, strapped for music on the whole setup, and get equal value, balanced, for both solo instrument and orchestra. The setup finally arrived at, used, and found satisfactory was as diagrammed.

Wilson Tuttle, director, and Pat Miller, engineer, have supplied the following interesting data and diagrams on some of Mutual's most interesting dramatic programs.

2. DRAMATIC SHOW: THE SHADOW

Noted for its unique sound effects and extensive use of filters, echo chambers, and other vocal acrobatics, The Shadow utilizes some

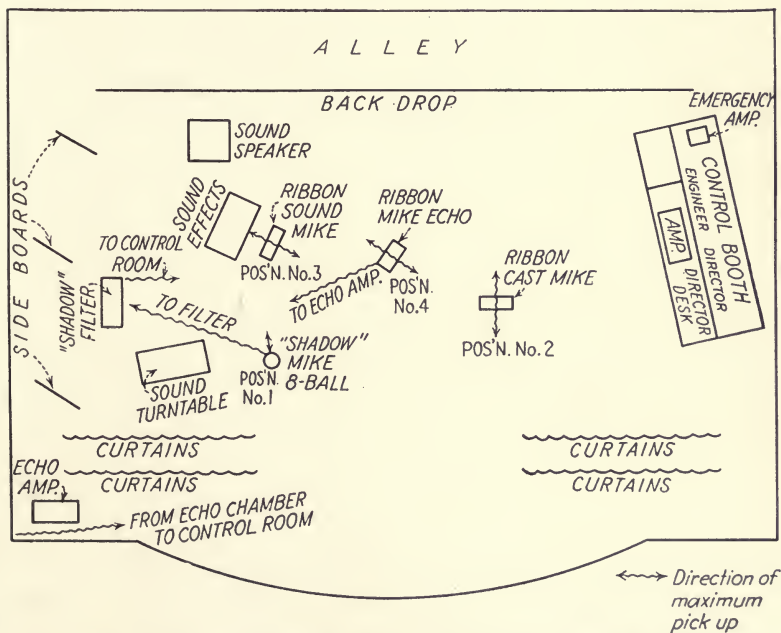


FIG. 1.—Normal "shadow" setup in which echo chamber is used.

unique setups on the stage of the WOR Mutual Playhouse atop the New Amsterdam Theatre in Times Square, New York.

Certain acoustical problems of note present themselves because the program is staged before a large audience, and therefore the studio must be open on one of its four boundaries.

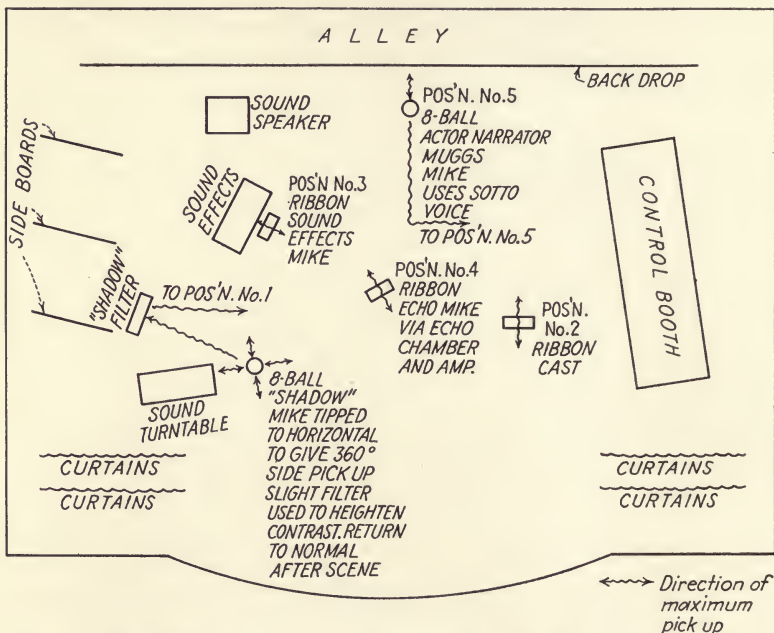


FIG. 2.—Setup used on scene in "Death of Capt. Bayloe." Filter used to cut "lows" on voices using "shadow" mike to achieve modified "shadow" effect.

Figure 1 shows the standard setup for most programs.

Figure 2 supplies the demand of a script in which a number of shadow voices, supposedly coming from all angles, must be supplied.

CHAPTER 4

CASTING

Of the preliminary details with which a radio director must concern himself, none offers such an interesting challenge as the job of casting.

A broadcast is no better than the talents of the actors through whom the director must necessarily work. He may spend a week of preparation, have 3 days of intensive orchestra rehearsal and drilling, may mike board fades and sound perspectives till the network shuts down, but if one actor in the cast falls apart at the seams while the show is on the air, he can just call it another broadcast and not a very good one. The only defense a director can possibly have against bad acting is not to engage a bad actor in the first place. To avoid doing so presupposes a knowledge, first, of what constitutes good acting, second, of what actors are good actors, and third, of what good actors are good radio actors.

Casting for the stage, for pictures, and for radio presents widely different problems, and it is not within the compass of this book to enter into a discussion of the specific problems of the stage and picture director, though there are points on which all three meet. Unlike his stage and picture brethren, the radio director need not worry about the physical requirements of the part. The heroine coming out of the loud-speaker may sound the epitome of all that is lovely, graceful, and desirable to the listener if her voice can convey that impression, but the actress in the studio can be fat, forty, and frowsy.

In casting a part for the stage, a director who knows his job and has money enough to buy the actor he wants will consider all the available people in the field who may conceivably fit the role. He may list fifteen actors who are within shooting distance of desirability for the part, and when the list has no more than been laid out, he will immediately eliminate most of them. This one can act well enough, but it is remembered that unless he

is held back he will overact. Or he is a little too tall. Or, now that he has started to wear that toupee, the bloom has worn off a bit more than is desirable. Or this next one didn't look so good in that thing he did at the Broadhurst last season; he developed a talent for underplaying that became so evanescent that it nearly ceased to be acting at all. Perhaps this one would be all right, but he has reached a point where he will no longer take a part in anything unless you engage his wife, who will want a leading part. Still another one would do, but his bags are all packed, and he is expected in Hollywood the fifteenth of the month. This one has grown stout. That one would be suitable if he hadn't developed an English accent since he played in London for 2 weeks last spring.

And so it goes, until the director has five excellent possibilities left. But one has just signed up with a different manager. Another reads the play and does not like the part. The next one reads the part and wants the play so rewritten that it would make a different and probably worse play. The fourth wants so much money that the show could never make both ends meet if he were engaged, and the fifth would like to direct the play himself, which is hardly part of the director's plan in hiring him.

Often when the choice of an actor has narrowed down to two or three possible and available candidates, the final selection is made only after the producer and the director have gone through the most elaborate beating of the breast and tearing of the hair. Complexion, bulk, family antecedents, shape of the leg, experience, willingness to accept a cut in salary under stress, voice, walk, wardrobe, contrast with other members of the cast, these and a dozen or more characteristics are considered, analyzed, and fought over in casting a part of the theatre.

In casting a part for radio, fortunately so many criteria are not needed. That is not to say that radio casting does not have its own mumbo jumbo. Much nonsense is indulged in by some radio directors who try to surround the business of hiring an actor with a murk of high-class sniffings, eyebrow lifting, and ear cupping. I have seen directors who were completely allergic to the finer shades of acting sit in a control room and nearly go into a trance over what some shapely young doxy from Kansas was pouring into the defenseless microphone. She could be reading the most threadbare nonsense that even a Duse with

all her gifts could not light up, but no matter. There was something about it—an eerie quality—the girl was different, and what did she say her telephone number was?

Decidedly there are things to look for in casting a part for radio, but the things to be looked for have been standard for a long time. First, there should be the ability to act, second, experience in exercising that ability, and third, experience in acting before a microphone.

In the past some good actors have turned their backs upon radio because they were frightened away from the medium by experienced radio actors who told them they had to know "radio technique." Radio technique was something one seemingly acquired after years of experience, or one was born with it, or one had it thrust upon him from heaven.

During the early years when radio was getting started as an amusement medium, the theatre was in a healthy financial condition. From June 15, 1921 to June 15, 1922, there were 199 stage productions on Broadway. Compare this with *Billboard's* figures of the season of 1937-1938, which saw 110 productions, of which 74 per cent were failures. In the 1920's a healthy and prosperous road tour confronted the actor at the end of the Broadway run. There were dozens of stock companies scattered in key cities throughout the land. Salaries were higher, indifferent shows lasted longer, giving longer periods of employment. During these years, in general, the better actors stayed away from radio business because they had plenty of work. The actors who strayed from Broadway to the radio stations were to a large extent the ones who somehow or other were unlucky in landing "legitimate" jobs or were the downright incompetents who were no better than bit players or out-and-out spear carriers.

These people, through no special talent of their own or even through the lack or limitation of it, stumbled onto a pretty good thing. If they were quick readers, had good voices, and were reasonably patient about sitting outside studios (an aptitude acquired from years of sitting outside Broadway theatrical managers' offices) it was not long before they were in the radio swim, so to speak. They picked up an array of microphone tricks (since production methods were not oversubtle in the old days, they didn't need many) they ingratiated themselves

with the active production men, and presently there was, in New York at least, a small group of actors who held a corner on most of the radio jobs. Certain characteristics of the business itself served to solidify that corner. There was a demand, a need for people aware of what "miking" was all about, and those actors got the jobs who had broadcast countless times and could therefore be counted upon to do a competent job in the shortest possible rehearsal time, time being always the priceless ingredient, of which no man in radio has a sufficient supply.

These actors of whom I speak, having sampled the fickleness of Broadway producers, having lived on greasy hotcakes and slept on day coaches doing one-night stands from coast to coast, had not become inured to the high vitamin content of three square meals a day and to the payment of installments on that little cottage in Bronxville. When the cold winds of unemployment howled on Broadway, when each year saw increasingly fewer stage shows, who could blame the favored initiates if they surrounded the business of radio acting with a murky mysticism? If they muttered about "radio acting technique" and "newer art forms" to their less fortunate colleagues in the Lambs Club, their mutterings served the dual purpose of bolstering up their own importance and making the precincts of radio seem even more fabulously unapproachable.

Similar situations, with local variations, existed throughout the country and, to an even greater degree, in the key cities where the stations had a limited talent field from which to draw. In consequence, the directors were forced to rely on the oligarchic few who knew the ropes to the exclusion of the ambitious neophyte who came knocking at the door, armed only with his hopes.

It is high time that radio actors stop frightening their artistic and economic competitors with that old Halloween pumpkin about the need for a "special acting technique." A good actor is a good actor whether he is on the stage, in front of a radio microphone, or in front of the camera. He may need to utilize his talents differently in each medium, but that basic aggregation of abilities that go to make him a good actor in any *one* of the fields may be called upon to make him a good actor in all of them.

No actor will deny that to create a characterization on the stage he must fall back upon a certain group of mechanical

aids that are the tools, the hammer and saw, of his trade. He must use them to do his job. For instance, he needs to know how to pick up a cue from the wings, so timing his walk and movement that at a given moment in the flow of line and play, he must be at a certain point with relation to the scenery and his fellow actors. He must know how to fit line with business or line with property. And all this must be done without seeming to be done. And just as he must know the conventions of the stage, so must an actor know the ways of the microphone. But there is no mystery about the technique, and it is about time that good actors learn this—that with a few lessons from a director who knows his business they can get up there and do a good job along with the rest of them. They may not learn all the tricks at once, and no one should put an inexperienced radio actor into a difficult miking job unless he cannot help doing so. Or, of course, unless the actor is a high-powered name star who can command enough rehearsal time to enable him to get substantial training before he goes on the air. An increasing number of name stars have found out that they may not safely give indifferent radio performances without doing injury to their reputations. When such performances have been given, it has been due invariably to stupid indifference or laziness that forbade sufficient rehearsal—rehearsal that would have enabled them to utilize the medium properly. Of course there are the stars who may have from 1 to 2 weeks' constant coaching under the perspiring and desperate director and still give an indifferent performance, but that does not concern us at this point.

Fresh and untried acting talent can be brought to the mike, but it must be done slowly and with some study of the proper way to go about it. A director would be foolhardy if he were to cast a radio play with a group of actors all of whom were untried before a mike, no matter how able they might be in other mediums. He would be foolhardy, because it is inconceivable that he could have enough rehearsal time at his disposal to give each and every member of his cast the proper instruction in miking. So many mechanical factors go into a production that are alien to the inexperienced that a director would leave himself hamstrung. Since no one will deny that too great a dependence upon the same actors week in and week out goes a

long way toward a monotonous quality in the voice pattern of a station's dramatic offerings, an intelligent director will strive constantly to bring new talent to his productions. How then shall he go about it?

I have found it a good practice to invite to the studio to watch rehearsals actors whom I hope to be able to use. Actors that I see in the theater giving outstanding performances I invite to spend as much time watching rehearsals as they feel disposed to spend. Simply watching a broadcast is not enough, however. The learner should watch how it is put together. A smooth, finished broadcast is the result of a great amount of hard work on mechanical factors, and it is these mechanics that should be studied. The novice should watch several broadcasts from the beginning of rehearsal, up to and through air. He will by that time have a better than fair idea of the reasons why actors are asked to do this or that. Seeing and hearing from the right place how sounds are built perspectively, he will understand, for instance, why actors must wait to take certain cues from the control room rather than from the preceding speech. He will acquire a far better understanding of the amount of work that must go into a radio performance.

When these novice radio actors have gone through the watching part of their training, they should then be cast in small parts. The mistake should not be made of putting too great a burden upon their slim experience. Put them in "bits" where they can do no special harm to your directorial product, where the characterization is simple and well within the outlines of the sort of part they have been playing in the theatre. Do not forget that to some people the relatively simple business of standing up before a microphone and being listened to presumably by an enormous audience is in itself an ordeal. After your actors have been on the air several times in small parts, they are in a fair way to being given weightier parts, for you know by now how well or how badly they stand up under fire.

It will be noticed that up to this point I have been devoting my attention to the experienced and tried dramatic actors who have won their spurs in one field and of the steps that should be taken to make them into radio actors. But what, may be asked, shall be done about the youngsters who crowd the waiting rooms of broadcasting studios and demand to be given their

opportunity to do what they call "act"? It is pathetic, but nonetheless true that a staggering percentage of such people are not and never will be actors. What is it that propels so many people to stage, pictures, and radio in the mistaken idea that they can act? Acting is one of the most overcrowded of professions, and in spite of its overcrowded and almost pauperizing economic conditions, every year hundreds of newcomers assail its ramparts, and these same hundreds are turned away regularly. With long lists of experienced, known, and competent actors unemployed and available, a director cannot, in all conscience, engage a tyro. Among the hundreds who apply, there are bound to be a meager few who have within them a gift for acting that in spite of hell and high water, in the face of starvation and rebuff, will enable them to reach some sort of pinnacle. Rebuff, in the various branches of the amusement world, has been elevated to a fine art, and these few whom spiritual necessity compels to keep on trying will taste refinements of frustration and denial that they never dreamed of when they planned their high, fine assaults on the producer's offices.

It is simply unfortunate that those in whom the flame does *not* burn can take rebuff as well as the others and can clutter up waiting rooms with a patience and devotion that would have brought reward in almost any other business than the one in which they hope to be shining lights. By sheer persistence, almost because of sheer bulk, these same misfits find themselves winning small ramparts of very low elevation in their struggle to emerge as actors. From this tiny bit to that one, from a few lines to a few sides, they make their way arduously, just far enough to lull their mediocre wits with the faint perfume of success, and presently—they are actors! Or at least they are so written down in the books. It takes no great talent to learn some lines and to pick up a cue, to learn upstage from down, and if one is equipped with sufficient self-love to begin with (and what actor worth his salt hasn't a little?) it is not long before he acquires a high opinion of a talent that is simply as mediocre as a flair for playing casino.

And so the ranks of prospective actors are filled constantly. So the trains, busses, boats, and bicycles drop off in the large cities where talent is engaged hundreds who might better have stayed at home. Acting by its very nature exerts a fascination

for the extrovert. It is extrovertism brought to full flower, and if it is nurtured properly, so says the extrovert in his heart, it will bring a high price in the market. Acting is one of the few arts that can sustain in a warm haven of self-deception the misfit who lacks the courage to compete in any other field of economic competition. He can continue for years to blame his own mediocrity and paucity of talent upon what he chooses to call "the breaks" and, buoyed up by his own lusty self-esteem, can go through life having "no" dinned into his ears in a thousand different tones and inflections by everybody from office boys to assistant assistants. In fact, the incompetent come to find a virtue in a "no" that is said with a smile—as against one that is said with a bark.

Small wonder, then, that a director will be forced to listen to a hundred actors before he will find the one that has the gift, the one who can read a play and sense its meanings, search out all its wonder and heartache, passion and tenderness, seize upon a part and invest it with the dimensions and warmth and blood of life. He will hear ten thousand before he will come upon one who can give back to him the intimations of greatness in acting that are in every line read by a Helen Hayes or meet with an actress like Ruth Gordon, who, in a single scene, can evoke the comic gusto of a whole era.

You, as the director, must be ever looking for that pearl of great price. You must set up auditions and listen to young men and young women, old men and old women, and boys and girls until you have before you a whole catalogue of all the histrionic and vocal characteristics of everyone who will want to act for you. You must have files of all the people you hear, files containing as complete a description of their abilities and voice characteristics as you can possibly note down.

(As a preliminary stage to granting auditions, the director should spend a certain amount of time each week interviewing prospective talent. At this interview, draw out all the information about the applicant's background that you feel you may need. Keep a record of this information and jot it down during the interview. Name, address, and telephone number or numbers should always be set down first. A ready, workable, and efficient file of telephone numbers is a constant comfort and a

tower of strength in a tight spot when an actor is needed in a hurry.

In drawing out information, put the actor at ease as much as possible. The more at ease he is the more essential information he may remember and pass on to you. Ask questions not as an inquisitor but as someone interested in the story the actor has to tell. If the applicant for audition is very young, some record of school dramatics may be important. With the growth throughout the country of fine dramatic departments in our colleges, more and more a background of acting in college productions is coming to have a meaning and value. The training fields for actors are becoming increasingly fewer. Permanent all-year-round stock companies where so many of our abler actors formerly learned their trade have nearly ceased to exist, and as a training ground for young actors the hit-or-miss, compromise methods of many of the summer stock companies provide no worthy successor. More and more extensively colleges are coming to include radio courses as part of the training in their dramatic departments, and throughout the country colleges increasingly interest themselves in radio education. More young men and women will come to the professional radio field with backgrounds of training and achievement in acting, production, and program building.

The more experience an applicant has had the more eligible he should be for an audition. If he has had no work before the mike, recommend that he try to get experience on the programs of the smaller stations. It is possible that at the smaller stations he can get some training and at least will be able to take the first plunge into the air before a radio audience that may be large but not as large as the coast-to-coast audience.

It is surprising how many young people feel they can carve out a successful career for themselves by acting solely in radio. It is true that throughout the country a large number of people are working successfully who have started their careers acting before a mike and who have never played a part on a stage, but it would seem to be the part of wisdom that the place to learn to act is not in a radio studio but on the stage before a live audience. It is on the stage, where he may feel the immediate response of an audience to his efforts, that an actor

will come to learn how to pick up cues, timing, variation of pace, the give and take of ensemble playing, his own capacity for communicating his interpretations to others—in short, the business of acting. The top-flight actors in radio are those who first learned their business on the stage.

Stage training is essential for the actor if for no other reason than that television will one day be an accomplished fact, and all the speculation and prophetic signs would indicate that present techniques of radio acting will necessarily be revised in the direction of stage technique.

Methods of conducting the dramatic audition may vary to suit the listener's needs, but some generalizations may not be amiss. First, the audition need not be a lengthy one. Instruct the candidate to come prepared to audition for no more than 4 or 5 minutes. Anyone who has a feeling for acting can convince a listener that he has that feeling in a very short time. Do not select the material yourself. Place the burden of proof upon the actor to show you that he is a good actor, reading material of his own choosing. It is not possible that you can know in just what special field of drama each applicant's talent may lie. (You might give comic material to one who handled comedy only indifferently but who might be an exceedingly sensitive and powerful tragic actor. It is because you cannot rationally expect an actor to do all things well that you should permit him to demonstrate to you what he knows he can do best, and, if he fails in that, he has no cause to reproach you for trying to push him into a groove in which he did not belong.

When you, as a director, get to know what actors do certain things better than other available actors, you will engage them as you encounter the need for their special talents, and your shows will acquire a hallmark of good acting that is much to be desired.

Many actors will come to you boasting about dialect equipment. Not only can they act, they say, but also they can at a nod from you run through at least twenty-two dialects without repetition. Beware of these lads if you want to retain your own sanity. Whenever an actor tells you he can do Senegalese with or without a lisp, Choctaw, Swahili, Burmese—the back-country type—Hindustani and Upper Silesian, it is time for you to kick him out of the office. Because of the limitation of

budget, the practice of doubling is a standard one in radio, and it is not unreasonable to expect an actor to give you English spoken with a fair-to-middling German, French, or British accent, but beyond that it would be unfair to go. If an actor can do this much reasonably well, be satisfied. A few actors can do dialects that are not met with frequently, and when they do it is because they have spent time in the country whose dialect they can speak, or they are themselves descendants of the nationality, or they have close friends whose accents they may imitate. When you need to cast such a dialect call upon the actor who can do it well, but don't go out of your way looking for protean dialecticians.

At any one session of auditions do not try to hear too many people. Hold reasonably close to a schedule of hearing a person for 4 or 5 minutes, but allow time for variation around that limit. Seven or eight people an hour is a full audition period, allowing plenty of time for spread. Have the engineer set up two microphones, one raised to a rather medium height and one rather short. Striking an average in this manner, he need not be leaving the control room to adjust the height of the mike for each person to be heard.

Try to set the applicant at ease for the first few minutes of his ordeal. An audition can be a terrifying thing, even to the experienced. None but the rankest of exhibitionists likes to be compelled to parade his talent or show his histrionic wares, and anything you can do to make the actor feel at ease will bring you some measure of returns in getting a better line on his abilities. Do not forget that it is a formidable task to walk up to a microphone and start to act for the exclusive benefit of a couple of people seated back of a panel of glass who look rather businesslike about the whole affair. As the judge of the audition, you have responsibilities. You should listen with an impartial, unbiased, fair attitude, and when you recall that other people's daily bread may hang on your decision, it can be seen that no other attitude is possible. Do not have guests in the control room listening to auditions who have no legitimate purpose in being there) but have come as idle watchers out of curiosity. Rather than have guests in the control room when there are others besides yourself interested in an audition, provide for them a room to which it may be piped (sent by wire).

Make sure before the audition starts that the actor is told to read violent or loud speeches to one side (the dead side) of the mike. The newcomer often has weird notions of the amount of sound that a microphone can carry, and it is well to know in advance what is going to happen so that the engineer may not be caught unaware by a shout that might blow out a tube.

One of the characteristics of nervousness is a shortness of breath. Actors may get out of breath before they start, and you will help them if you can get them to relax and get their breath before they speak their pieces. If they get started and you sense their discomfort and breathlessness, make them stop, relax, and begin again. Listen carefully during the audition and make notes and criticisms that should later be transferred to the file or card index that is the source of information to which you refer when casting your show. What should the notes cover? They should be as comprehensive and honest as you can possibly make them. Within the limits of the short time the actor has had to parade his talent, you can jot down a vast amount of telling information. The actor's diction is good or bad, careless or overelaborate. What he calls acting is dramatic material read without the slightest trace of characterization. It is well or badly spaced and timed. Passages that need expansion are given expansion. The voice is well rounded, or it is thin and sharp. It is nasal or clear, interesting or dull, lively or monotonous. He shows good training and experience in his general approach to the material he is offering you. If he extracts all the meaning and emotional quality inherent in the material, if you feel that what he gives you in interpretation is something from inside himself, whether it be his mind or heart, the chances are you have before you an intelligent actor worth your further interest. He may need mike training, but if he has shown you that he has range within his own field, whether as a character actor or juvenile or character juvenile, he has a right to be considered a possibility in your casting books. If the candidate is a girl or a woman, similar criteria should be applied, with the additional precept that beauty is not necessary if she can act. Make a note recording a candidate's general appearance, for, with the growth of invited audiences at air shows given both in studios and playhouses, attractiveness is an important asset and has a place in showmanlike production.

The following is an example of a typical casting card used at the New York offices of the Columbia Broadcasting System.

John Doe

75 West 2d Street

Columbus 5-2000

Plays straight and character roles. Does Irish and English dialect well—Cockney roles excellent. Speaks French and Spanish. Played in radio on the West coast (KNX); Played in pictures for Warner Brothers. In New York has played on NBC, WOR, CBS, and local stations. Theatre: Played in "Mahogany Hall," "Broadway," "Burlesque," and several other productions. Has played in summer stock for several summers. Recently closed with traveling repertoire company.

An audition showed in general a warm sympathetic quality. Voice is low; no great impact but controls it effectively. Readings are informed, times his readings well, has a well-controlled pace. Refined voice timbre makes his playing of common or tough characters unbelievable. Do not when engaging him put too much dependence upon his ability to double.

Up to this point the relationship of the director to the actor has been set down in so far as it concerns the utilization of the actor generally and the introduction of new and fresh talent to a drama medium that easily tends to be exclusive and to fall into the hands of a relatively few experienced people. But it should be apparent by now that the doors may be kept open to newcomers so that programs will have the freshness and variety that results from keeping a constant stream of new talents filtering into the studios.

Our concern now is with the routine to follow in casting a dramatic show. Given a dramatic script with x characters and a budget of y dollars, how would you, as the director entrusted with the job of putting the show on the air, go about engaging actors for the various parts?

First, list the characters in the play and put down after the name of each character a short descriptive phrase. A simple list of the dramatis personae might look like this. It is taken from a radio adaptation by Constance Brown of an old rural favorite, "Aunt Jerushy on the War Path."

Aunt Jerushy.....	Middle-aged, rural type.
Hiram.....	Small-town farmer. Constable.
Elder Snuffles.....	Oldish, self-righteous, sanctimonious.
Stelly Snapper.....	Dried-up spinster type.

Sis.....	Tomboy of the Sis Hopkins type.
Sufficiency.....	Young lad. Rural intonations.
The Barker.....	Slick city guy. Natural type. Fast talker.
Elsie.....	Pert ingenue with a light-comedy sense.
Reeno de Beeno.....	What her name suggests. A comedy vamp, a sawdust siren.

Here, of course, the characters outlined present no subtle problem in casting. The list clearly shows very well-defined types, and the director needs only to fit into the respective parts those actors he knows who can handle the type of work suggested by the parts. However, all casts do not fall into such simple categories. For example, when you can afford to engage six men and two women and the script requires eight men and four women, you are confronted with the problem of "doubling." You must engage people who can pitch their voices in such a manner that in addition to acting one role in their natural tones and voice range, they may, with slight chance of detection by the listener, disguise their voices and play one additional part. Of the six men, two must be good doublers, giving you eight voices, and the two women must each double, giving you the four that you need.

In assigning parts, avoid permitting an actor to double in the same scene. Occasionally you may violate this rule if one of the parts is played in a distant perspective, the distance from the mike aiding the deception. If possible do not permit a double to follow himself; in other words, play in one scene as one character and in the succeeding play as a different character. Allow a scene in which he does not appear to intervene between the two scenes in which he doubles. This rule may be broken if the director has great faith in the actor's ability to maintain the deception. There are radio actors who have amazing virtuosity in disguising their voices, and there are equally able actors who cannot double convincingly. In their voices there are distinctive qualities so well defined, so accented in timbre, and so restricted in range that their attempts at deception meet with failure.

On the stage doubling is more easily achieved than in radio. A different costume, a wig, or a beard or a mustache, a change in the gait, different lighting, any one or all of a dozen physical changes either in the actor or in his surroundings helps to maintain the deception, and the audience watching a play on the

stage will not be aurally as alert as the radio listener who is not distracted by having to watch as well as listen. Because radio is directed solely at the ear, the medium needs range of characterization in the voices. A flexible gullet often will serve to cover a deplorable lack of histrionic ability, but a discerning director should not be content with mere vocal disguise taking the place of good acting. Actors occasionally will go to extremes to disguise their voices. One day at an audition I was astonished to see the applicant whip out his false teeth and go into a double that would have deceived his own mother, but it did seem a rather drastic way of achieving his ends, and it is conceivable that it might be disconcerting to a cast to encounter, without warning, such an engaging gesture while they were on the air.

When the script is of the type frequently met with that is made up of many short sequences, for, instance the historical or educational script where a whole sweeping picture is presented and many characters are represented, it is a helpful practice to lay out on paper the scheme of cast. The example on pp. 78-79 will show how helpful such a cast plot can be. It is derived from a dramatization in the series *Men against Death*, based on the stories of the same name by Paul de Kruif and adapted for radio by Lawrence Bierson. The series appeared over the Columbia Broadcasting System in conjunction with the Works Progress Administration. Since there were sufficient actors available for the cast, the necessity for a great deal of doubling was not pressing.

One of the most important principles to follow in casting a show has to do with similarity of voices. Avoid casting two people on the same show who have similar voice characteristics. The parts may be almost identical. It may be, for example, that the writer has carelessly written into the script two girls who are interchangeable so far as delineation of character or type is concerned; in such a case two girls of widely different voice should be cast in the parts so that the listener may be able to differentiate between them. If actresses with identical voices were cast and there should occur a scene in the script where the two girls are talking to a third character, the similarity of voice in the two girls would lead the listener to believe that only one of them was present, and this would be even more completely

CAST

Character	Actor	Page of script
Announcer		1
Commentator		1
Production		
Sequence 1—Carleton as a Boy		
Carleton (11 years of age)		2
Mother		
Father		
Ed		
Sequence 2—Carleton Gives Up Teaching		
Carleton	(same)	6
Amanda		6
Miss Andrews		7
Dean		8
Squire		8
Sequence 3—Carleton Makes an Important Discovery about Wheat		
Taylor		10
Otis		10
Carleton	(same)	12
Sequence 4—Research along New Lines in the Fight on Wheat Rust		
Carleton	(same)	14
Miss Eaton		14
Farrel		14
Long		14
Amanda	(same)	16
Sequence 5—Russia Promises the Sought-after Wheat		
Carleton	(same)	18
Stefan		18
Luba		19
Sequence 6—Russian Montage		

CAST.—(Continued)

Character	Actor	Page of script
Russian one (1)	(same)	22
Carleton		22
Russian two (2)		22
Russian three (3)		23
Russian four (4)		23
(Voices)—four (4)		
Sequence 7—Foes in Washington		
Douglas	(same)	24
Finney		24
Carleton		25
Bates		25
Kimball		25
Sequence 8—Macaroni		
Amanda	(same)	26
Carleton	(same)	26
Sequence 9—Nature's Experiment		
Child		28
Mother		28
Sam		28
Hiram		28
Abner		28
Si		29
Sequence 10—Ill Luck		
Carleton	(same)	30
Nurse		30
Amanda		30
Sequence 11—Underhand Politics		
Secretary of Agriculture	(same)	32
Carleton		32
Sequence 12—Carleton Pays His Last Debt		
Douglas	(same)	33
Kimball	(same)	33
Bates	(same)	33
Finney	(same)	33
Amanda	(same)	34

true if it were not brought out in the context of the play that three people were present. Follow the practice of never engaging on the same show two actors of identical or closely similar voice and you will gain an added clarity in plot and production. In a well-cast radio drama just enough difference appears in each actor's voice never to leave the listener in doubt as to which character is talking.

Do not take the quality of an actor's voice for granted. Listening to a voice in your office and listening to the same voice on the microphone will reveal, more often than not, that there is a difference. A microphone most faithfully holds the mirror up to nature. It has an uncanny gift for bringing to the fore any slight natural blemish that would go unnoticed in the ordinary conversational exchanges of everyday life. A lisp that has become almost obliterated will suddenly lift its sibilant head, a locality tinge will proclaim its existence as blatantly as a calliope at the end of a circus parade, and tonal frequencies of which their owners are not even faintly aware will come to the front to impair their chances. An ear well trained to the revelations of sound that can pour out of a loud-speaker can even detect the presence of bridgework in a speaker's mouth. Actresses who claim to have been born and brought up in England, to have lived there all their lives, in fact, will get in front of a mike, and inside two minutes the practiced ear will catch the native wood notes of Brooklyn, N. Y., in spite of all effort to conceal them. In order to familiarize yourself with an actor's voice, then, and in order to have information on file for reference, get him in front of a microphone and hear what he sounds like before you engage him for a part, and do this whether or not you take his acting experience or mike training for granted.

In casting a play, it is not necessary to rely on records or on recollection of the voice qualities or past performances of countless actors. Make a list of those you think might be right for the parts. Under the name of each part put down the names of two or three choices, set up a studio period with an engineer assigned to it, have copies of representative scenes typed up, call in the candidates for the parts, and hear them audition competitively for the parts. You can then make your choice on the basis of this sort of preview performance, and you will

know in advance exactly what the voice pattern of your show is going to sound like.

All such competitive auditions are highly regarded by actors. They feel, and rightly, that when they have the opportunity of trying out for a part and fail they have at least had a certain satisfaction in knowing that they have been considered and have not been arbitrarily dismissed from the director's mind as possibilities. Better to try and lose than not to try at all. Be sure to give the competing actors an opportunity to look the part over for a while before miking so that they will have an inkling of what they are reading. Nothing in the director's relationship to the actor's can be quite so stupid and ill considered as the practice, derived unfortunately from the theatre, of shoving a script or a play into an actor's hand and, without the unfortunate Thespian's having the faintest idea what he is in for, telling him to go ahead and act the part of Hilary Gladstone starting on page 13.

Actors for specific parts are not always available at the rehearsal times laid out by the director. In cities where there is more than one radio station, actors take engagements as they are offered to them, and it happens often that engagements overlap, causing what are known in the trade as conflicts. From the actor's point of view, to be wanted for more than one engagement at a time is devoutly to be wished, indicating as it does, an active market for his talents, but it also saddens him to know that he cannot be in two places at once. Some conflicts are not allowable. To permit an actor to come to rehearsal so late that he cannot properly get the feel of his part would be an injustice to the audience, to you, to his fellow actors, and to him. If the program is complicated, with many complex sound patterns and if the actor can not get to rehearsal until miking is well under way, do not grant the conflict unless you feel sure that there is ample rehearsal time to enable him to catch up with the rest of the cast.

Some producers are adamant in refusing to allow a conflict of even so much as 15 minutes, and it is quite possible that from their point of view they are correct. It is within the province of any director to say exactly what he wants from the people he engages, and if he feels that 100 per cent attendance is what he wants that is his own affair and should not be questioned. I

have followed the practice of granting conflicts when it seemed that to refuse was unreasonable. Most actors follow an unwritten law that decrees that once having accepted an engagement they should follow through even though they are offered a subsequent conflicting engagement at a higher fee. Such a sporting attitude may easily be equaled by the director's permitting the actor a conflict when it can do no harm to the show and may do good to the actor's purse. If a director is sure of an actor's ability to pick up lost rehearsal ground, he will invariably grant a conflict, and if one actor is better for a part than any other actor available, common sense would seem to indicate that, conflict or no conflict, the part should be held open for him up to the last possible moment.

One final injunction. Steel your heart against letting any consideration other than the sole one of his rightness for the part move you in engaging an actor. The economic struggle of the actor is a bitter one, especially for the rank-and-file actor, and the director would not be human if, in casting, he did not many times feel impelled by his heart rather than his head. As between two actors of equal merit and equal rightness for the part, where it is known that the one is well lined with capon and has as much work as he can handle and the other needs the work desperately, the choice is clear. But if the lad with the lard around his middle is better for the part and to pass him by would be to break faith with your listening public, by all means engage him and let the other look for bread somewhere else.

CHAPTER 5

THE BOARD FADE

The board fade is one of the most important maneuvers a radio director is called upon to work into a broadcast. The need or the opportunity to use it recurs constantly, and the skill with which he sees to it that board fades are handled is almost a test of his qualifications as a director. A board fade can best be defined by describing what it does.

In the theatre, when an act or scene is terminated, the curtain descends, or the lights go out in a complete blackout. When the curtain rises again or the lights come up, we know that an interval of time has passed or a change of scene has taken place or both have been effected. In the moving picture, to indicate the same passage of time, the scene dissolves, and a new scene fades into view.

In radio one does not often avail himself of the barefaced device of saying, "We now pass from scene 1 to scene 2," or "The curtain rises now on Act II, disclosing," etc. Such bromides are avoided whenever there are taste and inventiveness in the control room. Without having to fall back upon the medium of the theatre to indicate the fall of the act curtain, radio has its own device. One scene terminates by fading down in volume and out, and the subsequent scene fades in and up in volume to the requisite normal playing level. The listening ear accepts willingly, without struggle, the fiction that a scene has terminated, that a curtain has fallen or the lights have dimmed out, and that a curtain has risen or the lights have come up.

Mechanically this result is brought about by the engineer's fading the master fader on his control console. One dial on the console controls the volume of sound of the entire board, and when it is faded down the effect is the same as when a person fades down the single volume control of the radio in his home. The trade term for this operation is the "board fade." When

it is utilized in the broadcast with taste and reason and when it is handled with technical proficiency by the engineer, it is one of the most effective and useful devices in the whole armory of radio-production operations. The student may ask, isn't it the concern of the radio writer to indicate where he wants the board fade to occur, and then, when it is properly indicated in the script, is it not reasonable to assume that the engineer is capable of handling the maneuver by himself?

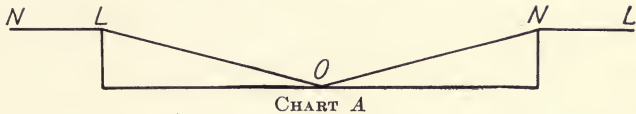
If the writer is sufficiently equipped with a knowledge of the mechanics of production to indicate board fades in the script, so much the better, but many times a director will insert a board fade into a show on his own artistic initiative to meet a need that occurs during the course of rehearsal. When a rehearsal gets going and the play begins to stew in its own juices, so to speak, occasions for using such a device that might not have been foreseen by the author arise. If the writer is unfamiliar with radio jargon, he should simply write his story to fall in sequences that terminate with music bridges or whatever connecting link he feels is correct, and when the script is before the radio director, he will, if the situation calls for it, utilize the board fade.

As for the second part of the question, of course the engineer is capable of handling the maneuver himself. The entire operation is worked by the engineer, but the board fade is a sensitive operation dramatically, and pacing the speed with which the fade is accomplished should be dominated by the direct cue of the director. The integration of cue from the director to the actor, the orchestra leader, the sound man, or to all three at the very moment he passes on the cue for the fade to the engineer as well as the precision and clarity with which he makes known his cues at the critical moment of the board fade are what make a board fade succeed or fail. Before we examine the various techniques of the board fade, let us consider a few facts, knowledge of which should be part of the equipment of every radio director.

First, remember that the radio director listens to his show as it plays back to him from the studio out of the monitoring loud-speaker in the control room. That loud-speaker is invariably one of the best the market affords. It is a high-fidelity loud-speaker and reproduces the sounds and words and music far more clearly and distinctly than those same words and music

and sounds will be reproduced on the average loud-speaker in the home. The loud-speakers in the home vary from very fine to average to very low in fidelity of reproduction. Bear in mind, then, that a very light sound or tone hardly heard in the control room will probably not be heard at all on those sets in the home that have only a moderate fidelity.

In Chart A is pictured the effect of a board fade under ideal conditions, the perfect and therefore, for practical purposes,



the non-existent board fade. For the purpose of our discussion, the chart pictures the board fade as heard in the control room. The sound, voice, music, effect, whatever it may be, proceed at a normal level from N to L , and at L the engineer starts to fade the sound out until, at O , it has faded to silence. The fade-back proceeds from silence at O , gradually increasing in volume until at N the level is again normal, where it proceeds normally along the ideal line N to L . If the receiver in the home were as faithful in pickup and as sensitive in reproduction as the device in the control room, assuming there were not even the slightest efficiency loss of sound in transmission due to atmospheric conditions, that simple graph would be sufficient to tell the story.

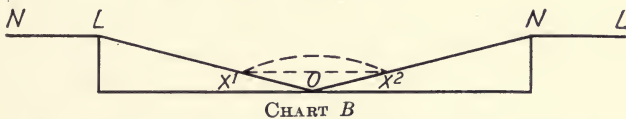


Chart B comes closer to telling what happens. The sound or voice or music or effect proceeds at a normal level from N to L , and at L the engineer proceeds to fade the sound down. Since the home receiver is not so sensitive as the control-room high-fidelity monitoring equipment, it becomes completely inaudible, not at O but at X^1 . From X^1 to O the engineer is still fading, and the sound, as pointed out before, is still audible in the control room until O is reached. X^1 to O in the home, however, is filled with silence. Fading back from O to X^2 (X^2 being the same level of sensitivity as X^1), there is continued silence in the

home. It is not until the X^2 level is reached that the sound begins to be heard again in the home, and from this point it continues to be heard, gradually increasing in volume until normal level is reached at N , from which point it continues onward at normal level. Note well, then, that the period of time from X^1 through O to X^2 is a period of complete silence on the home receiver, a time lag of silence of which the director should be aware. How many times have you sat in your home listening to a dramatic program and heard a scene fade out and have squirmed while waiting for the next scene to get started? Seconds seemed magnified almost to eternities while you waited for the fade-in to get started. It is quite likely that during that painful wait the director was listening to the fade, hearing it diminish to the most minuscular pianissimo, hearing it fade back slowly and—to his ears—beautifully, to normal level.

How, then, must the director avoid this time lag of silence? He must cut off the downward fade at a point where the sound is at a still fairly high level of volume on his monitor, at a point where it sounds abruptly cut off—in a word, at X^1 (Chart *B*). He must sense the point where the fade has reached X^1 , cue the engineer to cut quickly and open up his mike quickly to the level of sound represented at X^2 . The time lag X^1X^2 is then a matter of a few seconds, and the fade is moving quickly up to NL again. The fade on the home receiver sounds smooth, and there is no uncomfortable stage wait for the fade-in to get under way. The exact point in the script at which the board fade should be started should be marked carefully into the script of the engineer and the director. The exact point at which it should be completed should also be carefully marked. Do not forget that the board fade is a dramatic device and that not only should it be handled with mechanical perfection but it should also satisfy fully the needs of the dramatic text. It would be faulty production to insert in the text of a script a board fade that fulfilled the demands of accurate engineering and smooth production if in the slightest degree such a board fade did damage to the dramatic structure of the play. A stage curtain or a dimming down of lights at the wrong moment in a drama can wreck the smooth flow of the play, and in the same way a broadcast may be ruined by inserting a board fade at a point where it cuts off something essential to the continuity.

In timing a broadcast, the presence in a show of one or more board fades gives the producer a wide latitude in stretching the show or bringing it more quickly to its conclusion. In a board fade those sound elements may be stretched that are of a continuous nature, such as wind effects, a general ad lib from the cast, a record of a crowd yelling, the sound of horses' hoofs, a general bombardment, or any one of the hundreds of sounds that continue in an unbroken line. Music also lends itself beautifully to extended stretching in a board fade in or out. All the stretching must be done before the point is reached that is marked X^1 in Chart B (the point beyond which no sound is heard on the home receiver). Obviously the director must bring a certain amount of taste into prolonging board fades. If there are several board fades in the script, each fade should be stretched a little rather than to impose upon a single one the entire burden of filling in time. Just as such stretching is invoked in fading down on a continuous effect, so it is employed on the fade-back from point X^2 to normal level NL . Do not forget, however, to cut off sound at X^1 and get quickly to X^2 . In other words do not stretch the show on the silence of the home receiver.

Before discussing various techniques of handling the board fade, one final injunction should be pointed out. The director should have clearly fixed in mind the progression of cues surrounding the fade so that he may the more effectively throw them to everyone concerned. A simple board fade may involve only the director, the actor, and the engineer, but a more complicated one may involve not only these three but also a crowd of extras, an orchestra leader, a sound-effects crew of two or three men, and possibly a narrator or commentator. A complicated succession of cues is here involved, and the sequence in which they fall should be fixed perfectly in the director's mind so that he may throw them with precision and a feeling for the rhythm or smooth-flowing pace of the show. If he has not this sequence in mind, the rhythm can be slightly broken while he is wasting precious seconds trying to settle in his own mind the right succession of cues. Let us consider the following example of a simple board fade.

1

STUDENT

But there are some questions I should like to ask you. . . .

2 PROFESSOR

Sorry. I'll be in again for an hour or so next Wednesday. . . .

3 STUDENT

Only an hour.

4 PROFESSOR

My dear young man, I have other important work to do besides teach here at the University. I have a law practice of my own. (*Fade*) I couldn't possibly give you time if I . . .

5 STUDENT DELEGATE

And so, fellow delegates, I suggest this convention resolve that the universities of Argentina employ professors whose time shall be entirely devoted to the work of preparing our youth! (*Sound: applause.*)

Our simple problem here is to fade somewhere on speech 4 into the new scene of which speech 5 is the beginning. It is essential to the content of speech 5 that from the preceding scene we shall have learned that the professor has an outside profession that forbade him to give all his time to the student. The fade-out on speech 4, then, cannot be completed until that meaning has been established. If we start fading too early in the line, by the time the line "I have a law practice of my own" is read the level of voice may be too low to get out on the air, or at least too low to be heard plainly, and in that case the additional words "I couldn't possibly give you time" would not be heard at all. In order to get everything out over the air and at the same time indicate to the listener that the scene is closing, the fade should be started somewhere on the line "I have a law practice of my own." We will still be hearing "I couldn't possibly give you time if I . . ." as we approach the bottom of the fade.

This leads us to another sound device of handling the board fade properly. If we start the fade where I have just indicated, it is not at all unlikely, since the diminution of volume must be gradual, that by the time the actor gets to the last three words "time if I . . ." the fade will be still uncompleted. In fact, in order that all the important information be sent out over the air, it very properly should not have been completed. Consequently the director must add words to that last sentence

to give the engineer words on which he can fade, for the engineer must have the sound of line, word, effect, or music upon which he can fade, or else he will be fading on silence, and who then can tell whether or not he is fading? The director must add words that are necessarily innocuous, words that are sheer verbiage thrown into the script to meet a mechanical need, words that take away nothing and add nothing but a verbal cushion upon which the engineer can turn a dial, reducing them gradually to silence. Speech 4, then, will read as follows.

4

PROFESSOR

My dear young man, I have other important work to do besides teach here at the University. I have a law practice of my own. I couldn't possibly give you time if I . . .

BOARD FADE: . . . *wanted to for the simple reason that if I should do so under the circumstances that are at present in effect here at this seat of learning I should be open to a certain . . .*

Nothing has been added to the professor's speech that could do anything else but expose him to the charge of being a garrulous fuss-budget, but since we are fading his speech down, before he gets very far along he will be "out" altogether; the X¹ point will have been reached. One more important step must be taken in building this board fade. The actor must be instructed to look to the director in the control room for a cutoff signal shortly after he gets in to the added words. In other words, as soon as the reason for the words ceases to exist (*i.e.*, providing a cushion for the engineer) the words should be stopped. The actor must be ready to accept a signal to stop talking in order that we may start to fade in the next speech, which will take us to a new set of characters and circumstances. The abrupt cutoff enables us to proceed.

The addition of this wordage may be objected to on the grounds that the actor can be left to fill in his own ad lib words, and he can then be faded down without the bother of composing something for him to say. If you want to depend upon the actor's improvising on the spot you may do so, but do not blame him if he improvises on the air something you do not care for—something that adds a factor that, once in, cannot be disposed of.

Do not blame him if the improvisational mood fails at the exact moment when you—and he—had hoped that it would flourish. On the other hand, if you tell him what to say and get him to write it down in his script, you know it is there, you know exactly what you are going to get back from him, and you have disposed of a minor worry. When the board fade is occurring on a line, as in this case, remember to caution the actor to stay in position at the mike. Do not permit him to fade back on the beam of the mike at the same time that you are creating a fade in the control room on the board, for if he were to do so as he would retreat from the mike, and the engineer would be fading, an additional fading factor would be added to the mechanical one, and the effect would be to hasten the fade out of all proportion. Not only would the effect be precipitous but the engineer's control of the fade would be reduced.

Some directors feel that a better effect is achieved if, instead of fading the actor out on the board to terminate a scene, the actor should be instructed to fade back on the beam and at the same time drop his voice in a decrescendo of volume—in other words, “take his own fade.” That method of fading a scene, however, brings such variable results that it is not worth all the time and effort that are needed to bring it off successfully. In the excitement of creating characterization on the air, the actor must reproduce the fade and drop the voice exactly as planned at rehearsal, in which case there is bound to be slight variation in the physical mechanics that go into such a maneuver. If he goes back properly on the beam and does not get the proper gradual drop in volume, the voice is likely to be carried around the studio and a “roomy” tone result. It is much simpler and takes much less time for the actor to stand on the beam of the mike and let the fade be done gradually and smoothly for him in the control room. Furthermore, it is possible that this procedure will enable the actor to bring up his voice and give added force to his acting close to the mike if at the same time the engineer is riding the gain downward, an acting technique otherwise not permissible.

We have *faded down* speech 4 and are ready to *fade in* speech 5. The actor playing the student delegate is given his cue to proceed. The engineer starts to fade in the cast mike, and as soon as the first line of the dialogue is audible we know exactly what we

are listening to. Somebody is addressing a convention, and the whole sense of the speech harks back to what has gone before.

Just as the line had to be extended for the board fade-out in this example, so often the first line must be extended on the board fade-in. Let us take the following as an example of such a fade-in.

JOHN

Mary!

MARY

Where have you been?

JOHN

I've been here waiting.

MARY

You should have called me sooner.

If in the above dialogue we were to attempt a board fade-in, we could very easily do so, but we should not attain audible voice level until we had reached possibly the third line. Let us assume that it is absolutely necessary that we hear the very first word "Mary." Obviously it is impossible to fade in on a single word. Just as we wrote in words as a cushion in the previous instance when we faded out, so we must write in words before the word "Mary," in this case words that will act as a cushion for the fade-in. We might do this by writing in the word "Mary" several times, getting the effect of John calling to her as he enters upon the scene. The third "Mary" will surely be heard on the air. The first and second will provide the cushion, especially if they are spaced when read. The listener will hear the third "Mary" and "Where have you been?" will be still fading in slightly. Instead of repeating several "Marys," a different cushion can be provided for the fade-in by writing a full line leading up to the word "Mary" and directing John to read the line slowly.

JOHN

(I just had to see you,) Mary.

MARY

Where have you been?

The engineer now has a line on which to work his fade-in. If this line is too short and there is still some doubt that the word "Mary" is being heard on the home receiver, build onto the first part of the line, possibly as follows.

JOHN

(But I've told everybody that I just had to see you,) Mary.

Now the listener cannot escape hearing the necessary word "Mary." The director should always be ready to extend lines in this manner because need for them is a purely mechanical one that crops up constantly at rehearsals.

Let us take an example of a board fade involving the use of effects. The scene is from a dramatization of "The Canterville Ghost," by Oscar Wilde, dramatized for radio by Walton Butterfield.

SOUND: *Wind outside the house.*

MRS. UMNEY (the Housekeeper)

Many and many a night I've not closed my eyes for even a wink of sleep. Tonight is sure to be another. I'll take my supper in my room if you don't mind. That storm didn't come up sudden like for nothing. Good night to you, madam, and you, sir . . . and the Lord protect you all.

SOUND: *Heavy clap of thunder and wind fading away as grandfather clock strikes twelve. (Off)*

HIRAM

(Speaks on seventh or eighth strike) What's that striking now, Elizabeth?

"The Lord protect you all," read with the proper ominous note, is an excellent curtain line, and, followed as it is with a clap of thunder, there is dramatic impact present almost to excess. The wind, accompanied by occasional small thunderclaps, was held through the scene behind the dialogue, and it is upon the combination of the two sounds, wind and thunder, that the fade is worked. Both for heightening effect or for time-stretching purposes such a sound pattern as this should be cued up in volume for a few moments before the volume starts to fade down. Just

as it is not the most expert practice for an actor to fade back on the beam as his line is faded in the control room, so it is smooth production for the sound engineers in such a case as the one here outlined to keep up the volume of the effects (wind and thunder) and let the engineer handle the smooth diminution of volume. If the sound engineer in the studio were to drop the volume of sound coming out of the loud-speaker (assuming that the two effects were electrical) or going into the sound mike manually (by the use of hand-operated wind and thunder effects), the result would be a superimposing of one fade upon another, making for a very quick, precipitous drop in volume and not the smooth, gradual diminuendo attainable when the sole control of the fade is in the hands of the engineer in the control room. When the bottom of the fade is reached by the engineer, the sound technician should be cued to make an instantaneous cutoff of the wind and thunder effect. During the fade these sounds have been feeding full volume into the sound mike, and since they have not been fading in volume, it is absolutely imperative that they cut off on the split second so that there will be no spill-over of sound on the fade-in of the board fade as the engineer cracks open the microphone.

Now, with wind and thunder effect out, one of the sound men must be cued to start the striking of the grandfather clock, and on this effect the engineer should start the board fade-in. As indicated from the scene, the clock is an off-mike clock striking presumably downstairs or out in a hall. From the seventh stroke to the twelfth, the sound then will be perspectively away from Hiram, who is "on mike." Each of the strokes should be counted and cued to make sure that Hiram can be cued in on the proper stroke and that the sound-effects man does not forget himself and strike an embarrassing *thirteen* o'clock. The entire fade-in is worked on the striking of the clock, and there is no fading in of Hiram. From the moment he speaks the microphone is "with" him perspectively, and all perspectives built in the scene start from that assumption.

A board fade may be employed to give the impression of the continuation of an iterative act over a long period of time, as, for instance, a roll call. The technique is clearly expressed by the following example. Vice-president Thomas Marshall is speaking:

MARSHALL

The question is, shall the joint resolution pass?

POINDEXTER

I ask for the yeas and nays upon the passage of the joint resolution.

MARSHALL

Mr. Crockett, will you call the roll.

CROCKETT

Mr. Ashurst.

ASHURST

Yes.

CROCKETT

Mr. Bankhead. (*No answer*)

CROCKETT

Mr. Beckham.

BECKHAM

Yes.

CROCKETT

Mr. Borah.

BORAH

Yes. (*Start to fade roll call down*)

CROCKETT

Mr. Norris . . . (*Start fade-down at this point*)

NORRIS

I vote "no."

CROCKETT

Mr. Gerry.

GERRY

Yes.

CROCKETT

Mr. Goff. (*No answer*)

CROCKETT

Mr. Gore. (*No answer*)

CROCHETT

Mr. Gronna.

GRONNA

I vote "no."

CROCHETT

Mr. Hale . . . (*Fading up*) Mr. King.

KING

Yes.

CROCHETT

Mr. Kirby . . . (*Audible*)

KIRBY

Yes.

CROCHETT

Mr. Knox.

KNOX

Yes.

CROCHETT

Mr. La Follette. (*Normal level*)

LA FOLLETTE

I vote "no"! (*He should thunder this out*)

CROCHETT

Mr. Lane.

LANE

No.

CROCHETT

Mr. Lewis.

LEWIS

Yes.

CROCHETT

Mr. Williams.

WILLIAMS

Yes.

CROCHETT

Mr. Wolcot.

WOLCOT

Yes.

CROCHETT

Yeas, 22. Nays, 6. Not voting, 8. (*Music*)

Once the roll call has got well under way, the board fade should be started, possibly at the line where Crochett calls "Mr. Norris." From that point it should continue slowly until well out, and, with proper spacing from the actors, the fade-back will bring the cast back to audibility at approximately the reading of the name "Mr. Kirby." The scene then continues right on the tag line giving the number of votes. During the course of the fade-out there need be no cutoff signal to the cast. Before starting the fade-back, the actors simply continue reading, and the opening mike catches them at whatever spot in the continuity they happen to be. The listener is given a feeling that there has been a continuous passage of time in which the roll was called and answered by some eighty-five senators.

Often a script writer will close a scene lacking in dramatic impact by arbitrarily cuing in a musical bridge. Perhaps he is compelled to do so because the elements in the situation *sui generis* lack importance or impact, and the musical bridge is a simple and obvious way to close the scene. The director, however, may find that the use of a board fade will serve better than a musical bridge to effect the writer's purpose, for by its use he will not call the listener's attention to the threadbare condition of the writer's material, a thing that it is conceivable that he might do if he were to use the orchestral bridge. Thus it often happens that a director must save the playwright from himself, and, what is equally or more important, save himself from the playwright.

The use in radio, particularly in educational broadcasting, of what is called the narrative technique of telling a story is so widespread that a thorough knowledge of board-fade operations is invaluable to the director, since they provide such smooth integration between narration and illustrative dramatic scenes. It is essential that the narrator's speeches be clearly differentiated from the rest of the script. If a dramatic scene were faded out and a narrator faded in, the listener, logically confusing him with a

dramatic character, would get the impression that he was hearing another dramatic episode. To avoid this after the fade-out has been completed, the director should cue the engineer to open the narrator's microphone and instantaneously raise it to normal level, thus enabling the narrator to start with full volume from his very first word. The following excerpt, from "Americans at Work," written by Margaret Lewerth, illustrates the point. The speeches are the last few from a scene portraying a mine disaster.

SOUND: *Background of excited confusion of voices.*

MAN

Stand back, everybody . . . stand back! We're doing what we can to save them. Who'll volunteer to go down?

SOUND: *Men's voices up in roar.*

MAN

All right . . . all right . . . two at a time. Get your masks on . . . The vein's full of gas. And look out for another squeeze while you dig! There ought to be thirty-two men down there. . . . Pray Heaven, they're alive. (*Take board fade on ad lib shouts and yells*)

ANNOUNCER

(*On cue*) And hundreds of feet below . . . in thick darkness, the men waited for help. If it was humanly possible . . . etc.

Since the end of the scene is backed with a general confusion, there is no need to start the board fade until after the very last word of the man's speech. The cushion for the fade is provided by the ad lib yells and roar, and at its conclusion the yelling is given a sharp cutoff cue, the announcer's microphone is opened, and the narration proceeds on cue.

There is another board-fade technique that is helpful on the narrative type of broadcast. Often when the narrator has finished a lead-in to a scene, there is insufficient demarcation between the narration text and the scene, and the listener is seemingly thrown headlong into it with little chance of identifying his whereabouts. The plunge into the scene is so sudden that

there is uncertainty where the narration ends and the scene begins. A smooth production move is to cue the engineer to make a sharp instantaneous cutoff on his master fader at the end of the last word of the narration and to fade in the first line (extended if need be) or sound effect of the following scene. The following excerpt, from the same script of "Americans at Work," shows how this technique is employed.

ANNOUNCER

. . . Mining in those days meant little or no profit, because a company averaged only about 400 tons a year. In 1818, one of the more progressive Pennsylvania mine owners . . . Abijah Smith . . . resolved to do something to speed up production. (*Cut*)

Fade in

SOUND: *Pick and wedge sounds in background . . . Echo quality as in a mine. Cue when background is established.*

SMITH

I know you're a quarry man, Mr. Flannigan . . . and that's just why I've asked you to come and look at my mines.

The instantaneous cut after the word "production" and the fading in of the pick and wedge sounds on an echo microphone plucks the scene out of the narrative context, framing it as drama and example. It is smoother in production because the fading in of the sound effect enables the director to feel his way to the proper volume level of sound effects background and to the proper quality of mine echo to the entire scene before a word is spoken.

When narration is followed by a scene opening with an ad lib effect such as shouting or general conversation, the sudden burst of mixed voices from a group of actors is embarrassing to a person with sensitive ears. It is pleasant and convincing to cut all mikes instantaneously, cue the ad lib and then fade it in with a smooth and rational attack.

The next board fade represents the use of an extended line and a fade-in of the orchestra used as an effect. First the scene is given as written in the script before it has been given any corrective production:

MARVIN

Well, one afternoon about four o'clock . . . when it was 95 degrees in the shade . . . a fellow and a girl started paddling down the river in a canoe. . . .

(Orchestra up strong in a waltz . . . fade slightly behind dialogue)

JACK

(21, *eager*) Boy, it's swell here on the water . . . isn't it? How do you like the way the old portable works, Dorothy?

In this scene it is essential that we know that the boy and girl are in a canoe, because later in the scene a typical canoe accident occurs. Consequently the line after the word "canoe" has to be extended to create the board fade-out. An orchestra playing a waltz coming in where indicated would be a musical bridge and, once brought in as a bridge in the manner indicated, could not in the subsequent scene be accepted as a realistic phonograph record on a portable machine. It must be brought in as background music tricked to sound like a phonograph recording and then faded in a board fade. There are various ways of tricking music for the effect if regulations do not permit the use of recorded music. If the bass violin from a small stringed ensemble is cut out and the orchestra is picked up at relatively low volume on a microphone from which the engineer has filtered out some of the low frequencies and if at the same time the sound effects engineer plays a blank record on which there is nothing but grooves giving the effect of slight surface noise, an excellent simulation of an orchestral recording is created. The scene marked with cues as produced on the air looks like this.

MARVIN

Well, one afternoon about four o'clock . . . when it was 95 degrees in the shade . . . a fellow and a girl started paddling down the river in a canoe *(Start board fade out on following words)* and they had not been gone very long before the young man felt inclined to remark . . . *(Board fade in on orchestra playing waltz at low level to go behind dialogue. When well established, cue in following)*

JACK

(21, *eager*) Boy, it's swell here on the water, isn't it? . . . etc.

THE CROSS-FADE .

The cross-fade is a fading technique that is extremely effective. Expressed in its simplest terms, it is the simultaneous fading down of a production element picked up on one microphone accompanied by the fading up of a different production element picked up on another microphone in such a way as to effect a displacement of the one by the other.

When a cross-fade is employed on a single microphone it usually consists of the fading out of one sound effect with the fading in of another, the latter blending with and taking the place of the former after they have met midway in the fading range. By the use of the cross-fade, one scene fades out, and another fades in without loss of time or break in pace. It is a most serviceable device in accomplishing a transition from one scene to another without resorting to explanatory stage setting. It can be dramatically thrilling when correctly produced, and a more widespread use of the cross-fade would undoubtedly add increased entertainment value to many broadcasts. The number of dramatic situations in which it can be employed are infinite. Let us imagine for a moment that we are listening to a group of people conversing in an airplane. The scene is backed by the sound of the motors of the airplane. In complete cross-fading from one scene to the other after the last line of the first is read, the sound of the airplane motor is faded down, and the sound of the auto starts to fade up at the moment the airplane motor starts down. As one sound fades across the other, there comes a critical point where the sound of the auto displaces the airplane motor sound, and we are in effect transplanted from one place to another. Our imagination needs nothing further to complete the change.

A character may be speaking on a microphone placed in a "dead booth." This is a small portable booth with soundproof walls containing a light enabling the actor to see his script. There is a window on the wall facing the control room through which he may catch cues. In effect, the dead booth is a small isolated studio within a studio. The cross-fade technique in the use of the dead booth is a commonplace of production practice, since its isolation makes it acoustically an extremely controllable unit. Also a partial and temporary fade may be made

when the "dead booth" is employed. For example, a character is making a speech on the microphone in the booth, and for effect the speech is faded down and held behind another character speaking at normal level on the cast microphone. The listener is aware of the continuing speech, and when the second character finishes, the speaker in the "dead booth" is faded up to normal level again.

The use of fades of all kinds is common production practice, and directors tend to develop techniques best fitted to their own style of working; but however much the producer may vary in slight detail, those fades are most successful that are carefully thought out, cued accurately, and carried out from beginning to end with precision by everyone concerned in their operation from studio to control room.

CHAPTER 6

TIMING AND PACE

(THE DRAMATIC SHOW)

One of the everyday occurrences of radio is the common one of finishing the broadcast on time. To the studio visitor it is a wonder feat, composed of equal parts of necromancy and sheer good luck. ("How," they ask, "is it possible to start a broadcast at 6 o'clock and be absolutely sure that it will end at 29 minutes and 30 seconds after 6?" It is possible to do so because of the heritage of studio wisdom that has been handed down for use on today's program and because time is the merchandise of the medium. A linen draper sells dry goods, and when a buyer asks for a yard of goods he does not give him a yard and 6 inches. The commodity a radio station deals in is time, and, like the linen draper, when the broadcaster sells a half hour, he does not throw in an additional 6 minutes.)

If a director does not already possess it, he should cultivate a time sense, an awareness of how long it takes to say or do a thing. During rehearsal or just before air time if something unplanned should crop up as a possible element to be used in the show, two questions ought instantly to come to his mind. "Does the material belong?" and "How long will it take?" The addition may be a song, a chorus, a special announcement, a list of credits, a new scene, a lengthy gag—anything that takes time. The sense of time comprehends minus as well as plus, for if something is taken out, what will fill up the time formerly consumed? Must something be added or taken away, or should what remains be stretched? Once a director respects the relentless march of time, he need not be panicky about it. He can take time in his stride, so to speak, and, having made all the necessary obeisances to it, will inevitably finish the broadcast within its scheduled time limit. For emphasis and at the risk of being obvious, a statement of the standard length of program should preface any discussion of program timing. Although it

is true that time may be sold in almost any lengths, particularly on local stations where the complexities of split-second wire connections are not ever-present and where a more specialized rate card to meet local business conditions is necessary, in network operation programs are referred to as quarter-hour, half-hour, forty-five-minute, and hour programs. There are also 5-minute news broadcasts, followed by 10- or 25-minute sustaining programs. From any program 30 seconds must be subtracted to give the exact playing time of the program. The quarter-hour show is therefore 14 minutes and 30 seconds long; the half hour, 29 minutes and 30 seconds long; the next, 44 minutes and 30 seconds long; and the hour show, 59 minutes and 30 seconds long. The 5-minute news broadcast is 4 minutes and 30 seconds; the 10-minute show, 9 minutes and 30 seconds; and the 25-minute show, 24 minutes and 30 seconds in length.

The 30-second period between programs on network operations is to allow for telephonic operations. When the Columbia Broadcasting System offers a program from New York to the network, intended to last, for example, 29 minutes and 30 seconds, at the conclusion of the program, *i.e.*, at exactly 29:30, the word "System" is employed as a cue word to the station making up the network to cut in and make their local announcement within the space of 30 seconds, at the conclusion of which they rejoin the network if they are to take the next program fed to them or continue with whatever local program they may have scheduled. Bear in mind that there are times when a network may be feeding simultaneously several different programs to several different sections of the network. One of them may be a sustaining program on the air locally in the Eastern area while another is being fed to the Southern part of the country, still another is going to the Midwest, and a repeat broadcast of an earlier commercial program is hitting the West coast to compensate for a time difference. If they are of the same length they must finish at the same time and on the same word cue or the network wire operations can get dreadfully tangled. It is highly imperative that accurate timings be scrupulously adhered to at all times, but if it is possible they should be even more rigidly observed during the progress of networks split up in the manner described. If a sustaining program is followed by another sustaining program, the sin of not finishing on time is

not so heinous, for the following sustaining program may make up time; but if any program is followed by a split network, the necessity for finishing on the nose is a most urgent one.

There are three rules to be followed in timing a show and if they are followed there need be little worry about finishing on time.

1. Make sure that there is available as part of the show some feature or device that may be used to stretch the show if it is too short. Such devices are known as "cushions." They take up the slack and ease the show to a finish on the nose without a jar.

2. Always take air with less show than you need, and do not take air with more show than you can fit in.

3. Add and subtract all timings accurately.

1. An orchestra is a great blessing and one of the best cushions when the show is short. There are few broadcasts in which music may not be played anywhere within its framework and played deliberately to add running time to the show without doing injury to its pace or structure. If the orchestra is not a unit of the program, a stand-by piano player or organist will serve to fill out the time at the end of the broadcast. If none of these is available to fill, the show must be stretched by utilizing one of the elements of the show itself, as, for instance, continuous sound effects, the sound of wind, rain, speeding trains, water sounds, or mob effects. Any of these may be stretched within reason, and their use quite logically regarded critically as no more than a dramatic accent. A banquet picked up by remote control, a parade, a track meet or any drawn-out event continuous by nature and continuing after the sign-off presents no difficult timing problem. It is simply faded down on one microphone, and an announcer cued in on another reads a closing announcement. Laughter and applause are cushions, though the use of applause as a stretching device can be most exasperating. A discussion or forum broadcast is simple to finish in time, especially if the participants are voluble and the subject under discussion is provocative. When there is available on the program a speaker who can ad lib or improvise as long as there is need for expansion, finishing on time is simple. It is a joy to produce a broadcast where there are available on the show two such able

and fascinating ad libbers as H. V. Kaltenborn and Bob Trout. Both these gentlemen have an amazing gift for improvisation. Mr. Kaltenborn is able without script to analyze judiciously world events and pick his way rationally through the mazes of world politics, and he will bring his talk to a close at the exact second he is requested to, whether it be at the end of 2 minutes or an hour. Mr. Trout can improvise on the air without notes or script, painting brilliant and exciting word pictures that are the envy of professional radio writers who cannot do so well on their typewriters with plenty of time at their disposal.

2. If a broadcast goes on the air with less show than necessary, the comfort of stretching rather than the embarrassment of hurrying to get off the air on time is the reward. There seems to be something about stretching a show that is inoffensive to the listener, whereas rushing to pack in a lot of show at the end leaves him with a feeling of irritation. I have stretched a show for what seemed to me an inordinate length of time and have found upon making inquiry that it was not even noticed, but on the occasion when I have been compelled to hurry even moderately to get off on time, the mechanics were noticeably a source of discomfort to even friendly and biased listeners. Taking the air with more show than you can fit in comfortably is bound to result in a pace that the show cannot reasonably stand. This is a fault that is present more often in the educational broadcast than in the show presented purely for entertainment purposes. The educator usually tries to pack into a half hour all the available human knowledge on the subject, forgetting, even, that he himself has covered it in several books, any one of which would take a week to skim through.

If the broadcast takes the air with more show than necessary, it is imperative that additional time is not lost. Sound timing strategy then demands not that you lose but that you quickly pick up time in order to cut down the excess. If the timing is a minute over, every second picked up puts the broadcast that much nearer the goal of finishing on time. If the broadcast takes the air with less show than necessary, there is not the same necessity for stretching immediately unless the show is exceptionally short. The signal to stretch may be held back until the show is well under way—say, a third and sometimes as much as half of its length. There may occur a natural expansion

in playing that would make arbitrary stretching devices unnecessary. If the dress rehearsal of a show lasts the exact length of time that the show is scheduled to last, a small cut should be made unless it is clear that the air time can be held to the dress rehearsal time. However, if a cut is undesirable, some time can be picked up, preferably in the early part of the show.

The question is often asked if shows tend to go faster or more slowly once they get on the air. There is no definite answer to this question, but it has been my observation that, in general, they tend to go a little more slowly. The freedom and looseness, the absence of tension characteristic of rehearsal period are gone, and their place is taken by a caution that holds back rather than propels forward. Scenes that are slow scenes by their very nature tend to take a little longer on the air from the actors' impulse to "milk them dry," to get all the histrionic values from them. Directors, then, from the timing point of view, should be wary of slow scenes and slow-moving plays. I have gone on the air with a minute and a half of spread or cushion in a half-hour broadcast of a slow-moving play and, without doing injury to the drama, have completely lost the spread in less than five pages of dialogue. Since it is difficult to budge actors from a slow pace if the drama demands slow pace, it is essential that such plays should be kept on the rehearsal timing as much as possible or more time than can possibly be spared will be eaten up by over-slow performances.

If the broadcast goes on the air with less show than necessary, it follows that it must be stretched somewhat. Do so, but try always to hold a little time in reserve. Stay ahead; do not fall behind. It is far better to have 10 seconds "to play with" than to be behind 10 seconds. Be ready if necessary to fall back upon the "cushion." It is always a comfort on dramatic broadcasts to have 30 seconds to "play with," giving up 10 seconds of it here, getting back 10 there, and probably 5 to spare over that. As the close of a broadcast approaches, by stretching a music bridge or a sound pattern it is a simple matter to lose 15 or 20 of the 30 seconds, leaving only 10 or 15 to dispose of in the last minute of the show.

3. It is absolutely essential to add and subtract timings carefully. Carelessly writing the figures 16 for 17 can make all the difference between finishing on time and finishing late, or at least

between finishing gracefully or finishing in a hurried pell-mell fashion. Read your stop watch carefully. Faulty reading of the stop watch can cause embarrassment in timing. Occasionally check your stop watch with the studio clock to make sure it is running accurately. Keep your stop watch away from electrical equipment in the studio as much as possible. The delicate spring, when exposed to magnetic electric fields, becomes magnetized easily, necessitating adjustment. Get in the habit of keeping your own timing even though an assistant may be assigned to help you and to take care of this important feature of the broadcast. If you come to depend upon others to do your timing for you, do not forget that there will be times when there will be no one to help you, and of necessity you will have to do it yourself. There can be fun in timing your own show. Many broadcasts represent a challenge to your ingenuity in getting them off the air on time, and one of the pleasurable by-products of directing an air show comes in the additional satisfaction that derives from meeting the challenge successfully. Equip yourself with a good stop watch. A good one costs about \$15. Get in the habit of carrying it with you constantly, for you never know when you may need it. Constant use of a stop watch is bound to make one adroit in its use, and in a short time one can become so attached to it that starting and stopping the watch become almost a reflexive action. The instant the rehearsal stops the hand seeks out the watch and stops it and is just as quick to start it when the rehearsal or reading begins again.

Very quickly a director gets into his own bookkeeping habits of timing shows, and no ironbound rules for writing timings need to be laid down, but for the dramatic show a timing should be written down at every 30-second interval—30, 1:00, 1:30, 2:00, 2:30, etc. A timing of every 15 seconds of script seems to involve too much bookkeeping. During the dress rehearsal of the dramatic broadcast the 15-second timing can be so insistent that there is little time for doing anything but writing down timings, when the director should preferably be making notes to be used in correcting performance. Write the timings either over the exact word on which they fall or on the right-hand side of the script at the end of the line, and write them large enough and with a dark enough pencil so that they may be clearly seen.

On a talks broadcast, a timing at 15-second intervals is a great aid of cutting. By its very nature there is a concentration of subject matter in the prepared talk that is not characteristic of dramatic dialogue. In consequence, if it becomes necessary to cut a speech, it will, in general, be easier and will do less violence to the thought processes involved to cut segments of 15-second lengths of time than it would be to cut 30-second segments. The timing of the talk in 15-second intervals can help the director to fasten onto smaller, more cuttable parts.

Determining the length of a cut by inspection rather than timing it rests upon the judgment of the director. After a cut has been made, the cut should always be timed, but there are occasions when this procedure is impossible. In such cases the director should estimate the approximate length of time the cut takes and make the proper allowance for it in his computation.

After one or more cuts have been made in a dramatic script or talks broadcast, what happens to the timings that have been so carefully written into the script? If 15 seconds are taken out on page 5 and 15 seconds on page 8 and 30 seconds on page 12, obviously all the timings written into the script after page 5 have been changed. It is not enough to say that 60 seconds have been cut out of the script. All the timings on the show must be revised to take account of those 60 seconds that have been cut so that at any place during the running of the show the director can know where he is and whether he is ahead or behind the proper time that will enable him to finish "on the nose."

The simplest aid to keeping the timing situation in mind when such cuts have been made is quickly to jot down on any piece of scratch paper the scheme of cuts in the following manner:

Page 5	15 seconds	15 seconds	.
Page 8	15 seconds	30 seconds	
Page 12	30 seconds	1:00 minute total	

If there is time to do so before going on the air, run through the script quickly and change all the timings after page 12, reducing each one by 1 minute. If there is no time to do so before taking air, it can be done after the broadcast begins. Let us assume that in the middle of page 13 there is a figure indicating the dress-rehearsal timed 12 minutes and 30 seconds. If the broadcast

is to run on time, that spot on page 13 must be reached in 11 minutes and 30 seconds.

Using the same convenient cuts for the purpose of a seemingly more complicated example, assume that they were made on pages 5, 8, and close to the end of the script on page 28. Bear in mind that the air show will be running on the nose *between* pages 8 and 28 if the performance reaches each dress-rehearsal timing reduced by 30 seconds. Remember that the final 30 seconds will be picked up on page 28.

These examples may seem at first glance to be somewhat pat, but it is a simple mathematical truth that figures don't lie, and it makes no difference how oblique the cut may be—1 minute and 29 seconds, 2 minutes and 44 seconds, or 5 minutes and 12 seconds—the exact position in a script that a show should be playing in order to be on time can be determined quickly and accurately by subtracting on any one page the sum total of all the cuts that preceded that page and bearing in mind the sum total of all the cuts that will occur on subsequent pages.

In addition to the use of the program orchestra or the stand-by music setup, there are innumerable ways to adjust the running time of the dramatic broadcast to ensure finishing on the nose.

THE TENTATIVE CUT

First, of course, there is the tentative cut that is simply a portion of the broadcast located usually in the latter portion of the script *clearly* marked out in advance of taking air, to be omitted or played depending upon a signal from the director. If you wish to avail yourself of the cut, make sure that everyone involved in the broadcast is given the signal to cut, well in advance of the spot in the script where the cut occurs. It makes for uncertainty to wait until the last possible second before taking advantage of a tentative cut.

THE EMERGENCY CUT WHILE THE BROADCAST IS ON THE AIR

The emergency cut, made while the broadcast is on the air, is the most daring, for it is fraught with unlimited possibility for ragged production. There is no escape from it, for it has to be made. The necessity for making it usually comes from an emergency network operation, and it may happen in a manner

something like this. The show is just about to take the air when a special news bulletin is inserted before the broadcast, a bulletin running anywhere from 20 seconds to 5 or 6 minutes in length. The short special "flashes" are only mildly upsetting. It is the long ones that do damage to closely timed shows that follow them, for while the show is on the air as much time must be cut as the special announcement takes away from the show, plus 5 seconds. The 5 seconds is the length of the interval that should be permitted to elapse between the end of the special announcement and the moment the show is started. Make sure that you follow the special announcement carefully, noting its running time as well as its subject matter. If by chance the opening of the show conflicts with the subject matter of the special announcement and if there is any way in which it can possibly be changed, such a change should be made as a matter of program policy. For example, if the special announcement should announce the death of an important world figure, it would be most embarrassing if the opening theme should be "Hallelujah, Here I Come." A hurried switch in themes might be salutary. When the length of the running time of the special announcement has been noted, start thinking fast about what cuts can be made in the latter part of the show. The secret of making successful dramatic cuts while a show is on the air lies in making them sweeping enough. Do not try to make tiny cuts that add up to very little. Cut a whole scene, cut two scenes if necessary, and dictate to the announcer a short narrative bridge that can take the place to some degree of the scenes you cut. Then, if the complexity of the production prevents you from going out to the studio floor yourself, send the announcer quietly to inform everyone in the studio who is not at the mike what you are about to do. See that he tells everybody—sound engineers, orchestra leader, and cast—what the cuts are and that preparation must be made to make them. There are times when a cut must be made while the show is on the air, and there is no way to tell the actor or narrator at the microphone what the cut is to be. In such cases, if you stand beside him and point with the finger to the place on his script to which you want him to jump, the cut can be made without undue break in the line of continuity. This practice should not be indulged in, however, if the speaker is inexperienced. Besides making

substantial emergency cuts in script while the broadcast is on the air, do not forget that additional time can be picked up by quickening the whole pace of the show over the rehearsal pace. When you are faced with the need for making a cut while the show is on the air, think your way through the situation carefully and quickly. If you get into a panic you are lost, but if you exercise judgment, weighing the pros and cons of whatever alternatives are before you, the chances are that you will come out all right. Cut descriptive or elaborate explanatory material; cut comedy scenes—but do not cut plot.

The running time of the dramatic broadcasts can be changed by stretching or shortening music, bridges, sound patterns, board fades (if sound effects are an essential part of them), studio audience response, and intelligent changing of pace. Revues and audience-participation shows may be stretched or quickened by shrewd manipulation of studio laughter and applause. Timing a musical show represents no great difficulty. To a certain degree it is more easily computable than a dramatic broadcast, particularly if there is a dress rehearsal. If the show is over, cut a chorus or a whole number or a repeat, possibly cut down the continuity, and that is all there is to it. When there is no dress rehearsal, the problem is not quite so simple. Many musical shows go on the air without the benefit of a formal dress rehearsal. The rehearsal time of orchestras can be a very expensive proposition, and most leaders will spend their time rehearsing individual numbers, either instrumental or solo, adding nuances of interpretation and color, variations in tempi, manuscript correction, etc. They properly prefer to spend the available and expensive rehearsal time in this way rather than in running through the whole show for so routine and mechanical a purpose as timing, and in any case each number is played without interruption at least once during the rehearsal period. On these occasions the producer should clock each number. He should also get a clocking of all the announcements or narration that, together with the musical numbers, make up the program. The sum of the two timings, the timing of all the narration plus the gross timing of all the musical numbers, equals the running time of the show. If the show is too long, the producer should ask the leader to cut some of the music, a whole number, perhaps a chorus or a repeat, and the leader

should estimate the approximate length of the musical cut. The cut portion can be played and timed. Sometimes a leader will hum and beat out the cut, and the producer can time him as he does so, or the music may be so standard that a simple estimate of the length is all that is necessary. Unless the narration is particularly informative, it is smart to cut narration in preference to cutting music. Listeners would rather hear good music than indifferent talk any day or hour of the week. Since few good conductors ever conduct the same number in the same way twice in succession, room should be left for spread on a musical show, just as there should be on a dramatic broadcast—at least 30 seconds, sometimes as much as a minute.

In timing the dress rehearsal of a music broadcast, particularly one wherein the music numbers are separated by narration, the time should be set down each time the narration ends and when it picks up again after the number. This elapsed time is, of course, the length of the musical number. This timing should also be set down on the continuity beside the running time, so that at a glance the producer can note the exact length of time of each number. During the air show, by constantly checking the starting time of any number and adding to that figure the rehearsal playing time of the same number, he can figure the approximate time at which it should end and thus be enabled to estimate whether the show is slow (running behind rehearsal time) or fast (running ahead of rehearsal time). For example, suppose he is producing a half-hour show and the orchestra starts a number after he has been on the air 7 minutes and 30 seconds. He knows from the rehearsal timing that the number takes 2 minutes and 30 seconds to play. It should finish, then, at approximately 10 minutes after going on the air, and if the unplayed portion of the broadcast adds up to 20 minutes and 30 seconds the timings show that the broadcast is exactly on the nose. If the show is running slow, it may be quickened upon signal, or cuts can be made while the show is on the air. These emergency or tentative cuts should have been previously agreed upon before air time so that when they are made they will not come as a surprise to anyone. Often it is a simple matter to cut narration while the show is on the air, particularly if the narration cut does not also cut a number. When a cut in narration does cut a number, it should be made far enough

in advance so that the orchestra leader may signal the cut to his men. Numbers in a musical show as well as cues in a dramatic show are numbered in sequence—1, 2, 3, 4, etc.—and a whole number cannot be cut while the show is on the air unless the leader can be sure that every individual member of the orchestra has understood that an entire number has been skipped. If the show has to be stretched to fill time, the narrator may lengthen his reading; or, upon signal to the orchestra leader, possibly a chorus of a number can be repeated; or, at the conclusion of the show, the theme may be played until the required time has been filled. It cannot be too strongly urged that accurate addition and subtraction of timing figures, together with complete understanding of signals and procedure between the orchestra leader and the producer of the course of action to be followed in the event of emergencies, are all that are necessary to get the musical broadcast off the air on time.

In closing this discussion of timing, again it should be urged that a director cultivate a sharp time sense, a keen awareness of the passing of time, and a faculty for estimating quickly the quantitative flow of production. This he may do without sacrificing a jot of artistic integrity, without for a second thinking of himself as the slave of a stop watch. With the proper feeling for and judgment of the passage of time, what is done with a watch can be as interesting a part of the whole function of radio direction as bringing to the warmth and glow of life a passage of dramatic writing.

PACE

Along with timing, a sense of pace is indispensable to a director. Nothing is probably quite so disturbing to a listener as to hear a broadcast that rides along like a bus driven by a bad driver. It goes along nicely for 100 feet or so, when suddenly the brakes go on hard and everybody gets a little shaken up, and presently it is off again, smoothly, until the next change of pace. The analogy may be a bit strained, but it is the most graphic one I can think of to illustrate the discomfort of listening to a badly paced broadcast.

Life is geared to rational tempi; when any one of them is interpolated into a situation in which it does not belong the result is an incongruous violation of all our normal expectations.

Consequently a director should remember that scenes should be played at tempi that are consistent with their emotional and ideational content, and transitions from one scene to another, from one pace to another, should be arrived at without a violent rhythmic wrench. Perfectly integrated drama has the beat and cadence of music. The flow of words and music and sound and ideas is actuated by its own inner compulsion and should always obey the canons of harmony and rhythm. The pause between two words can often demand a little eternity of its own, and the sensitive director will supply it at the cost of cutting a page of dialogue. That awareness of the need for speed or slow time should be part of a director's equipment, and if he has none of it there is no way to supply him with it any more than a monotone can be equipped with absolute pitch.

CHAPTER 7

MICROPHONE REHEARSAL

Having made all the necessary preliminary arrangements, having laid out in advance every single detail that concerns your show, you are ready to proceed with the rehearsal. From this point on you will be concerned with reading, timing, balance, microphone placement, pitch, pace, sound-effect qualities, volume intensity, "liveness," "deadness," perspectives, the position of the cast with reference to the microphone, script interpretation, script cutting, station or network policy, commercial policy, musical cues, matters of temperament, getting your show off the air on time, emergency announcements, mechanical failure, engineering failure, and a hundred and one details all centering about you and in one way or another controlled or modified by you. Your awareness of all these elements, your ability to set them forth, to correct or adjust them to your show, your coordinated knowledge of them and of what to do when you are confronted by problems arising out of them, is the test of you as a radio producer.

Before you proceed with the first reading of the script with the entire cast, let the engineer know how many microphones you are going to need. This you are able to tell from your general knowledge of the script. You will need one or more microphones for the cast, one or two for sound effects, one for the orchestra, possibly a microphone for some special use—as, for instance, a "filtered" mike or a mike to be used in a dead booth or a separate mike for echo effect. If the engineer knows your needs at this point early in rehearsal, he may be making all the necessary patching adjustments of lines and channels while you and the cast are reading the script. The moment you are ready to work and rehearse on microphones you will find them set up and you may proceed with no loss of time.

Next, assign to the cast the various parts they are to play in the script. It is a safe assumption that the time of this assignment is the first time any of the cast have seen the script. It is not the usual practice of the trade to give an actor a script a day



Assigning parts at the first reading of the script.

or more in advance. Scripts are not often available, and the actors are invariably so proficient at their jobs and so excellent at "sight" reading that a study of the script before rehearsal is unnecessary. If you wish to give an actor a script in advance so that he may study his part and if a copy is available, there is no grave reason why you may not do so. If a certain part is extremely difficult of performance and there are subtle shades of reading that an actor may evoke better with the aid of preliminary study, by all means see to it that he has a copy in advance of rehearsal, but, in general, for the usual broadcast, the moment when the entire cast foregathers for the first time will be the first time any of them will have seen the script.

At this time assign not only the parts to be played but also the parts that will be doubled. If possible, avoid allowing an actor to play two large parts in the same show. Give him one large and one small or obscure part. Try to have these two parts separated by a wide expanse of playing time, *i.e.*, one large part in the early scenes of the script and the small one in a later scene or vice versa. If possible, and it usually is, see to it that the characters to be doubled are "far apart"—in other words, that they represent widely separated types. A cultured, genteel character and a rough, hardy, uncouth character present no special difficulties for the average actor. They are so "far apart" that the actor may vocally disguise the one completely from the other. A "straight" character, *i.e.*, an ordinary man or woman with no specially indicated characteristics, may conveniently double with a character that has a foreign accent of any nationality, assuming that the accent is at least a fair simulacrum. In assigning doubles, permit at least one whole scene to intervene before the second double is attempted. In this way the doubling will be carried off with a better chance of deceiving the listener. The unprofessional ear is not trained to recognize voices and will quickly forget dominant voice characteristics, particularly when the ear is bombarded with a succession of new voices. If you allow a scene with different voices to intervene before a voice double occurs, if the actor doubling has only a mediocre facility in disguising his voice, the ordinary listener will not detect the deception. Actors have a vivid way of expressing this principle of doubling. An actor will say he does not wish to "follow himself." In other words he does not want to create one vocal

character and immediately, without the protection of intervening voice colors, be forced to create a succeeding vocal character. It follows from this that an actor should not be called upon to double in the same scene. Occasionally an actor with a brilliant set of vocal tricks will be able to do so, but do not expect to have such actors always on hand. Such glottic virtuosity has its kinship in the three-legged boy or the two-headed calf. One encounters it but hardly depends upon it.

A check has been put upon the amount of doubling that may be asked for by producers. Obviously when too many parts are doubled in any one show by a few actors, the practice tends to cut down the number of actors that are employed. The American Federation of Radio Actors has set down the rule that

. . . an actor playing a part in a dramatic episode of whatever length may double one other part and play one additional "voice" or a brief unidentified part, without additional compensation. If used for a second double of any identified part requiring characterization, the actor shall be paid 50 per cent of the regular fee, and for each additional double, the full fee. Where the program consists of a series of short different episodes, such as dramatized news broadcasts or historical sequences, such programs should be considered an exception. Participation in crowd noises shall not be considered a double.

After the cast have been assigned parts, the director might give the actors a few moments in which to mark their parts. Actors have different ways of doing this, depending upon individual caprice or need. Parts should be marked. A clearly marked part is a visual aid of immeasurable help to the accuracy and speed with which cues are picked up, and the liveliness with which cues are picked up brings returns in the better integration of performances. Here is an example of a marked part from "Dickens' Birthday Party," by Constance Brown.

SNAWLEY I am in the Oil and Colour Way. My name is Snawley, sir. I have been thinking, Mr. Squeers, of placing my two boys at your school.

SQUEERS: It is not for me to say so, sir, but I don't think you could possibly do a better thing.

SNAWLEY Hem. Twenty pounds per annum, I believe, Mr. Squeers?

SQUEERS: Guineas.

SNAWLEY Pounds for two, I think, Mr. Squeers.

Thus the part of Snawley stands out in bold relief, and there is no excuse for the actor's not seeing clearly outlined for him the part that he is to play. Even when the character has only a single line on a page and when it comes after he has been silent for ten pages, if the actor follows the script he cannot be taken unawares. The sight of the carefully ringed line should be warning enough for him to stand by to deliver the line on cue.

At the first reading of the script take a rough timing on the stop watch. This first timing does not need to be, and rarely is, accurate. The purpose is simply to give the director a *general* idea of the running time of the script. When, for example, the broadcast will be 29 minutes and 30 seconds long and the rough timing runs to 35 minutes in length, if this preliminary reading has been read at a pace that generally approximates the pace at which the director expects the broadcast to be played and if, during the reading, 10 seconds have been allowed for each musical bridge or mechanical bridge, it is obvious that a substantial cut in script needs to be made. There may be a short scene that can be cut without doing violence to the integrity of the script, and this may be the time to make the cut on the theory that if it is made now, no time will be wasted in directing a scene that is already marked with a blue pencil. On the other hand, it may be wiser to leave in this scene and rehearse it, for often a scene with no great plot value will take on a color or warmth or feeling with playing that gives it inestimable importance to the show and makes imperative the cutting of another scene. Such a condition is hard to foresee, but with experience a director will acquire a prescience about these matters. He will be able to sense in advance what scenes will catch fire with playing; he will be able to hear in his mind's ear, long in advance of their being spoken, lines that have inherent qualities necessary to the full flowering of the drama as a whole.

This first reading of the script takes place with the cast seated about the director. Remember that the play is not yet read at the microphone. Very little direction should be given at this reading. As was pointed out, it is the first time the cast has seen the script, and the players are confronted with hitting upon a characterization solely from the context. If there are no guideposts in the script to enable the actor to pitch his characterization quickly, it is the function of the director to put

him on the right track. Sometimes, even before the reading, it is not amiss under certain circumstances for the director to talk to the entire cast and give them an inkling of his general intentions with regard to the whole production. He may want to give the whole play a certain note, or hit a certain dramatic pitch not obvious at first glance; he may legitimately want to extract from it a dramatic flavor apart from the obvious one; he may want to distort the play for his own good purposes, and these intentions should be made known to the cast at the outset. Take, for instance, a play such as "Among the Breakers," by George M. Baker. This is a melodrama in a very antique tradition of both playwrighting and acting. Judged by today's standards, it is an old chromo. The lines are high-flown, the situations homely and homiletic, the purposes of the drama are extravagantly moral, and its whole tone is guaranteed to uplift the godly and warn the unregenerate.

In directing such a play for a modern audience, one may proceed in either of two directions. It may be done completely in the spirit and manner of its own day of acting—in deadly earnest, with complete reverence for its moralistic attitudes and intentions. Lines that we regard as full-blown, pompous, and moth-eaten in structure and content would be read with devotion to, and a sense of affinity with, the era that evoked them. Or the director may go completely in the opposite direction and good-naturedly exaggerate that which is already exaggerated and caricature that which is already a caricature of itself. The play then, as the popular phrase goes, is "kidded," and the result is an amiable burlesque of a dramatic genre that has disappeared. Now, a cast should be informed in advance of reading such a play just what the director's intention is; only a few words would be necessary to set them straight. In radio, an actor's characterization tends to jell quickly, and it is sometimes a difficult job to unjell him and set him off in another. Be sure, then, to head him right before he starts, if it is possible; more often than not, it is possible.

During the first reading of the script a characterization may be correct in outline but occasionally strike a dramatic pitch remote from, or completely at variance with, the director's ultimate intention. A note of tragedy may creep in when not the slightest intimation of tragedy is in the director's mind.



Notes of seriousness, comedy, whimsicality, archness, innumerable qualities of characterization come into a script unbidden and tend to throw the accent of the play off in an unwanted direction. At the first reading such disorders of interpretation must be set straight, or it may presently be too late to do anything about them; or they may resist correction so strongly that only a great deal of effort can dislodge them. One thing more should be done at the first reading. The script must be corrected completely, once and for all. Innumerable cuts and changes will come later, but it is absolutely imperative that everyone start out with the same script. Typographical errors should all be corrected. Additions or emendations that have developed since the script was typed should now be made. Where the script has been typed by more than one person, it often happens that pagination varies. If the numbers of the pages differ or are not clearly typed, take time out to renumber them. It is far better to do this now than to wait until you are about to make a fast cut on page 12, just before you go on the air and discover that you and the cast are talking about two different pages 12—a discovery that may be most disconcerting.

Make all the slight line changes that you find impede a smooth flow of reading. Take out all the unnecessary “if’s,” “and’s,” and “but’s” that stand in the way of a flowing line. Always permit actors to make such small cuts without delay or without objection when, of course, they do not interfere with some vital part of the thought. Actors are quick to object to uncomfortable word formations. Some words in the language should remain forever unspoken, left in perpetuity to the stylists, never permitted to escape from Paterish contexts into dramatic continuities to bedevil the lips and pharynges of struggling AFRA members. If you come upon an unfortunate actor gagging and choking over some curious verbal or syllabic juxtaposition, pluck out the offending words from his throat and substitute others that will make his lot easier.

At the conclusion of this first reading you have before you, with the exception of cuts for time, the script that will go on the air. There will still be changes, but you are nearly ready to start “miking the show.” While the cast is taking a short recess you still need to check sound effects. From now on your place is largely in the control room. Be sure that the sound effects

engineer and the control engineer both have the same script that you and the cast have. That is, if the former were not present during the first reading with the cast, make sure that they write in on their scripts whatever vital changes have been made. Minor word or phrase changes, even small cuts where they do not actually precede sound effects, are not necessary in the scripts of these technicians, but all large cuts and changes that affect sound or the running of the show should be taken down in their scripts. It is most reassuring during a broadcast to know that everyone is intent upon putting on exactly the same show.

Henceforth, whenever sounds or sound balances or sound qualities or performances or music balances or levels are discussed, let it be understood that reference is made to how they sound *nowhere else but in the control room as they come over the monitoring loud-speaker*. How anything sounds in the studio without reference to the manner in which it is reproduced or heard in the control room is in no single degree the concern of this book. The level of volume of sound heard over the loud-speaker in the control room is controlled by a dial. The monitoring level of sound volume should be set at a moderate level. Setting it too high gives the director a somewhat distorted sense of sound reception. High-fidelity loud-speakers in the control room can emphasize low-level sounds that may not even be finding their way to loud-speakers in the home. Most modern control rooms are equipped with a talk-back feeding to a loud-speaker in the studio, enabling the director in the control room to converse freely with the people in the studio, who address him simply by talking within range of any open microphone.

From now on the production of the dramatic broadcast is a cooperative venture in the control room between the control engineer and the radio director or producer, and the measure of success of the program depends upon how well these two combine their efforts. The engineer sits at a control panel upon which are a number of dial volume controls. Each one of these connects with a microphone. If the show consists of a cast, an orchestra, and sound effects and if each one of these elements uses only a single microphone, three of the dials before the engineer on the panel are to be used, one controlling, for the purposes of transmission through the air, the volume of the sounds made on the

cast microphone, one controlling those sounds made on the sound effects microphone, and the third picking up the sounds coming through the orchestra microphone. The over-all volume of the three dials is controlled by a master dial on the panel.

The engineer's function is to mix on this panel the various and varying volumes of sound as they are picked up on the microphones. All the balances, the interrelation of sounds picked up on the microphones, and their varying levels of volume are determined at rehearsal and are marked as indicated on his copy of the script so that during the course of the broadcast he is prepared at every moment of the show for each variation in sound and may make at the instant that a variation occurs the proper modulation on his instrument panel.

Besides interpreting his script in terms of drama, the director interprets his script in terms of sound levels or volumes in conjunction with the engineer. Sound perspectives are worked out, and the engineer is fully conversant with every intention the director has in mind. He knows exactly the effect the director has worked to achieve and assists in achieving that effect with every resource at his disposal.

In making a check of sound effects before starting the cast rehearsal on the microphone, do not take up too much time. Let us assume for the moment that you have ten effects, some of which may be made with records and some by hand. Listen to each one separately, and quickly make up your mind just which ones you are going to retain. For example, assume that one of the effects indicated in the script is the sound of an automobile engine. From a superficial inspection of the script, the sound effects engineer may have judged that an eight-cylinder V8 type of engine is indicated, and he may have provided himself and your show with that type of sound effect record. But you know that the sound the scene demands is that of an old-fashioned Model T Ford; obviously a far cry from the other. You simply reject, then, the V8 record along with the other effects that you judge are not exactly what you want. You may reject a sound record in favor of a manual effect or a manual effect in favor of a record if you decide that with the change you get exactly the dramatic or realistic effect that the scene demands. To take time at this stage of rehearsal to make necessary alterations in effects usually works out to your advantage, for the sound

man may send an assistant for the right effect or even go after it himself. It is better to start with the correct effects than to be well along in the midst of a complicated mike rehearsal later on and be forced to suspend work and wait until the sound man equips himself with the proper effects. That still may happen, of course, but more often than not rejection of improper effects at the outset saves time.

Call the cast together and start the mike rehearsal. The mike rehearsal consists of starting on page 1 of the script and continuing until the very last page to rehearse and interpret every line of the play. It means that every single sound effect and sound pattern must be rehearsed over the mike. It means that no single part of the script is to be left to improvisation over the air. Obviously at this early stage of the rehearsal certain elements of the entire production are not yet present in the studio. The orchestra has not put in its appearance, nor, usually, has the announcer. Until the announcer appears his lines may conveniently be read by any member of the cast, particularly if a sound pattern is woven about the announcer's opening speech. For example, the story may concern a storm at sea. At the opening of the script a gale is blowing that immediately fades when the proper background is established to let the announcer give the title to the show and set the stage for the opening scene. In this and every similar instance involving the announcer, mike the scene around a member of the cast, and, when the announcer does appear on the job, quickly indicate to him what his function is in this opening pattern and simply substitute him for the rehearsed actor.

Before going further into the discussion of miking, an important bit of procedure should be stressed. Remember that any radio show is performed and produced in two places, on the floor of the studio and in the control room. Whatever happens on the floor of the studio must be fused with what goes on in the control room. The synthesis of the two spheres of action is what produces a radio show. At innumerable times in the course of the broadcast the personnel in the studio perform or cease to perform upon the direct cue of the producer in the control room, and that direct cue is established at the mike rehearsal and incorporated into the body of the script by the actor, the sound engineer, the chorus, the mob, the control-room

engineer, and the director and the assistant who aids him in putting on the show. *Every cue must be written into the script!* And when a cue is written into a script it means that when the moment comes for the director to give that cue he must give it. The accuracy and clarity with which a director gives cues is often the measure of the success of the entire production. During the course of a broadcast only the most subdued whispering is permitted in a studio. Microphones are becoming increasingly sensitive through engineering improvements, and actors cannot expect to receive instruction from the floor except in unusual circumstances. They must of necessity look to the control room for cues. It is extremely reassuring for the performers on the floor to know that behind the glass in the control room stands one person, alert, watching, intent upon every phase of the show, one person who is a veritable lighthouse to whom they can look for signals of guidance; for affirmation in the form of nods of the head; for direct cues when they are met with in the script; for suggestions as to pace—in short, for all the support and comfort they may need in any tight spot occurring in the course of a broadcast. For some reason, radio has nourished many sessile directors. Who has not seen actors straining their eyes for a good, clear glimpse of the director who, for reasons best known to himself, has settled clamlike into the most comfortable chair he can find in the control room and buried his head in his script below the level of vision from the studio floor, expecting from that obscure point to have actors take cues from an invertebrate pinkie flung diffidently into the air! Stand up on the floor of the studio and fling cues where everyone can see them. Even if they are wrong ones, fling them with the courage of your own faulty convictions; fling them without ambiguity, and do not let it be said of you that when the mistakes are made you are not ready to stand by your own directorial guns. Let your signals and cues be clear-cut, unmistakable, and direct them at the person for whom they are intended. Make sure you catch the eye of that person or his nod of the head, indicating that he is aware of the signal you have passed on to him. Do not tell an actor during a mike rehearsal that he can expect, at a certain point, to get a cue from you and at the same time fail to mark that exact spot in your script. Do not depend upon your memory. Insist that every member of the

cast mark his cues in his script. By the time you have finished the mike rehearsal and the dress rehearsal, your script will be a document well covered with innumerable cue signals to be thrown to a great number of interested performers. Incidentally, in marking scripts with cues and timings, do not write them in a delicate Spencerian hand. The lighting in control rooms is usually pleasant and not overbright, probably because too bright a control-room light throws reflections on the glass windows facing the studio. Delicate cue marks on a script are often difficult to see, especially if you are standing well above the script lying before you on the talk-back panel. Be sure, then, to mark cues legibly, large enough and black enough to enable you to see them without eyestrain. Cues and timings should be written into the script at the exact spot at which they occur.

Some directors feel that they can get the best directorial results by working out on the studio floor, listening to the progress of the show through earphones (called in engineering vernacular "a pair of cans"), and giving their cues to all concerned right from their midst. There are times when this technique is completely necessary. For example, one may be called upon to produce a dramatic show on the stage of an auditorium on portable remote-control broadcast equipment. There is no studio, or at best there is only a small portable booth, which is invariably too small, too stuffy, and altogether undesirable for anyone but the one or two engineers forced to work in it. Under such conditions a pair of earphones run to the center of the stage where the mikes are placed will give the best makeshift play-back equipment for the director. Also, when the director himself plays a part in the show, the earphone technique is imperative. Orson Welles, directing the Campbell Playhouse, builds his show from the studio control room while someone stands in and reads his part for him. When the balances and sound perspectives have been fully built and the engineer understands completely and in close detail exactly what is required at every point of the script, Welles becomes the actor and continues from then on through the dress rehearsal and airshow, working on the floor of the studio from earphones.

In producing a variety show in a playhouse, the dress rehearsal and air show may be directed from the stage, with the director using earphones, after levels and balances have been well outlined



Orson Welles, gifted actor-director-manager, shown rehearsing a broadcast of the Campbell Playhouse. Welles claims no discoveries of new techniques in radio direction. He simply avails himself with taste and imagination of all the existing techniques that have grown up around microphones in twenty years and many that have been standard in the theatre for two thousand years and weaves them into first-rate productions.

in the control room. In such cases an audience is present, and it will respond to promptings and direction from a director on the stage more quickly than from someone in a control room.

One of the objections to the use of earphones on the floor of the studio or stage lies in the fact that earphones are relatively of a low-fidelity sensitivity or pickup. They are much less sensitive to perspectives of depth and to variation in tone quality than the loud-speaker in the control room. There are, however, other reasons why the control room is the most satisfactory place for the director. In the control room, during the course of a broadcast, with the engineer working side by side with the director, there is opportunity for constant minute adjustment of level of sounds, instantaneous correction of balances, quick adjustment of any transmission difficulties without the loss of time or motion that is inevitable when the engineer has to communicate by signal with a director on the floor of the studio. Remember, too, that no show is ever performed twice in exactly the same way. Every single performance has its accents, its own colors, not always widely different, but different with new and slightly altered subtleties. A sensitive director will instantly sense that an air performance is veering off ever so slightly, in an unpredictable manner, from the rehearsal performance. Certain emphases may creep in, purely because of the human factor involved in any show, and because of these new and unforeseen accents readjustments of other factors previously established in rehearsal must be changed. With this new set of values making their appearance in an air show, possibly a music cue marked fortissimo at dress rehearsal might profitably be changed to a mezzo-piano orchestral attack and brought up to fortissimo. There should be latitude for this sort of directional improvisation, and it is more than likely that it cannot be brought about when the performance is heard by the director from the floor on earphones simply because it is too difficult to apperceive subtle changes through a device lacking in high fidelity.

It is at the microphone rehearsal that the radio director comes closest to deserving the name of director as the word is understood in the theatre. It is at the mike rehearsal that the work of the director really begins. It is here that he imposes his own background of experience upon the play at hand when

he molds the dramatic forces in the script and sees to it that they are fully expressed and interpreted through the actors, mechanical sounds, and music. Upon this task he brings to bear everything that he knows or has learned. All that his own judgment, taste, or wisdom dictates is necessary for the perfect realization of the dramatic intentions inherent in the manuscript before him. Every single line and every single sound effect in radio drama must be developed on the microphone in terms of sound perspective. Sound perspective is the rational basis upon which radio drama as we now know it stands. For all its wonder-working, the shortcomings of the microphone are mostly apparent when it seeks to bring to the listener the dramatic broadcast, for the weakness of the microphone lies in its inability to create without help a picture of depth, an impression of third dimension. At the other end of the microphone, at the loud-speaker, the listener needs help in creating for himself the illusion of depth or third dimension, and the director gives him that help by building sounds at varying distances from the cast and sound-effects microphones, sounds built up around the actors to carry out the realistic demands of the dramatic picture.

Every single sound put into a radio drama must be built imaginatively to reproduce as closely as possible a realistic picture of the sounds of actual life and their occurrence with relation to actual life. Such a realistic reproduction of sounds, however, involves selection and choice, for it would be futile to build around a set of dramatic characters every single sound, however small, that actually would happen in a given series of events. The world is filled with an infinity of common, everyday, useless sounds implicit in the business of living; steps, coughs, knockings, rattings, tappings, bumpings, boomings, raspings, etc., sounds that would require a distressing onomatopoeia to enumerate. Fortunately we take no heed of them, and fortunately they are obliterated by a divine Providence that sees to it that their uninteresting pulsations are quickly dissipated into a thin air that quickly ceases to tolerate them. Luckily, too, our ears, accustomed to the monotonously repetitive characteristics of these sounds, reach a point at which they are instantly accepted or rejected. We ignore, or fail to be aware of, countless millions of sounds. It is a wise radio director who will reject infinitely more sounds than he accepts. He will

take sparingly only those sounds that he absolutely needs to round out his dramatic picture or that he needs to fix the position of one speaker in relation to another speaker or in relation to a place or events about him. So far will he go toward the utilization of sound in a drama and no farther, for any attempt to build a complete and literal reproduction of all the life and sounds implicit in a drama will meet with aesthetic disaster. Such an attempt is beyond the limits of the microphone. Superlatively fine things are within its reach, but its limits should be known and respected. A dramatic broadcast is no better than the illusion of depth that is achieved for it by the director by building sounds perspectively. In the theatre an actor stands exactly center stage and says to another, "I shall leave this room," and he proceeds to walk upstage, open the door, go out, and close the door behind him. The action is simple, direct, and the eye needs nothing to complete the picture. In a moving picture, the same stage business occurs, with the addition sometimes of the close-up used to accentuate the whole movement of the character from the one place to the other. In radio, when the actor says, "I shall leave this room," the ear is the sole device that enables the listener to know whether the character has done what he says he is going to do, and the ear can be extremely fallacious. Its impression needs to be accentuated, and this accentuation is achieved by the director's creating a sound perspective of depth at the mike rehearsal and carrying it through in the live broadcast on the air. An actor placed at normal speaking distance from the microphone for the purpose of radio drama is standing center stage. We have to accept that position as a starting point, and once the ear accepts the fiction of center stage, resultant sounds have to flow from that fiction. When the actor on the cast microphone says, "I shall leave this room," he moves backward on the beam of the microphone. The door that he opens must then of necessity be a door placed off the beam of the *sound* microphone, and when that door opens and closes the listener gets the illusion of depth. To reverse this dramatic picture, if an actor is at the microphone and the dramatic business requires a door to be opened and a character to enter the room and walk toward the figure at the microphone, the door still off the sound microphone is opened, and the character entering walks in on the beam of the

cast microphone to the normal microphone speaking position. By balancing the words spoken on the *cast* microphone with the sounds produced on the *sound* microphone, the illusion of depth is created. If an actor says, "I shall open this door," and we have every reason to believe he is standing at the door, the sound of the door opening must be in the same perspective as the character who opens it. In other words, it must be full on microphone. It would be silly if the ear caught the sound of the door opening at some distance from the speaker. If the sultan says, "Ho! slaves," and claps his hands and the hand clapping seems to come 10 feet from where the sultan is standing, the result is incongruous. The hand clapping must be about the same distance from the microphone as the sultan.

To enlarge upon the fiction of center stage we must use another term that is derived exclusively from radio. When a character is center stage the microphone is said to be "with him." To illustrate this concept, take a simple case of a man and a woman standing in ordinary conversation. The microphone is *with* these two people. They are our story. They are our drama. We want to know what they are saying. The moment these two people separate, the director, to establish a perspective, must decide *with* which one of the characters the microphone stays. If our dramatic interest is with the man, the microphone stays with him, and when the woman says, "I shall leave this room," obviously she will go off microphone, and if further words are exchanged between them the woman's words must be read from an off-microphone position, and the man's words must continue to be projected to her "on microphone." Thus the illusion of depth is preserved, the male character still remains center stage, and the microphone still remains *with* him. From the listeners' viewpoint, someone must always be on microphone. Within a continued story there can be moments, rationally prepared for, when all the action can be off microphone, but sooner or later the microphone must be *with* somebody. It is only by the microphone's being *with* somebody that further sound perspectives may be created. A radio drama is a story told in terms of a series of sound perspectives.

In creating any sound pattern, the sound that accompanies the action must be in the correct perspective with relation to that action. If, for instance, the action of the story concerns

the leader of a mob of men and if he is speaking from the mob of men, the actors playing the mob must be grouped around the microphone at nearly the same distance from the microphone as the leader. If, on the other hand, we wish to get the perspective of one person yelling from a distance, that person must be placed back of the crowd and at some distance from the microphone. If one person is addressing the mob and we are trying to create the illusion of distance between the speaker and the mob, the speaker is placed on microphone, and the mob is placed at a distance from the microphone. In creating the illusion of a mob it is sometimes advisable to use a record of a mob to enhance the live mob in the studio. In doing this, however, remember that records are made in sound perspective. These perspectives once enshrined in wax, are rigid, fixed, and imperishable. Great care must then be used in keeping the live mob perspective the same as the recorded group perspective. Possibly a simple example of perspective may be obtained from an examination of a short scene from a radio playlet. We shall take the following scene and indicate the relative positions of the actors on the microphone, having in mind the creation of perspective and depth. It is a scene from the "Little Indian of Mexico," by Bernard C. Schoenfeld, and shows Emperor Maximilian in prison shortly before his execution.

VOICE (Announcer)

It is dawn of a beautiful day in a prison cell in the town of Queretero. Maximilian stares out of the window. Two of his Mexican generals, also condemned to die, sit on the cot of the prison cell.

SOUND: *Yelling mob in the distance continuing behind the following.*

MIRAMON

(*On mike*) Look . . . His Majesty Maximilian is praying.

MAXIMILIAN

(*Fading in*) No . . . No, my friends, I am not praying. I was just thinking . . . once I caught a falcon and placed it in a cage. It would nip at me each time I touched it. I realized how much freedom meant to it. One day I opened the door of its cage and let it fly away. So it must be, I think, with the peoples of the earth.

MIRAMON

Never, Your Majesty!

MAXIMILIAN

Last night I had a dream. I saw my brother, the Emperor of Austria . . . and with him was the Czar of Russia and the King of Spain. They stood before me, and in my dream I knew that they were dead. Perhaps it is a prophecy. . . .

MEJIA

No! No! Long live monarchy!

MAXIMILIAN

Before I die I should like to meet Benito Juarez.

MIRAMON

So would I. To kill him!

MAXIMILIAN

No . . . to look into his eyes and try to understand why he will be remembered long after us.

MIRAMON

Do not have such thoughts, Your Majesty. You have done a great service for the world.

MAXIMILIAN

No. . . . What has it brought me? My wife has lost her mind. . . . In Belgium she stays in a room where time and space have lost all meaning for her. And I . . . I have been just a pawn moved from a red square to a black.

SOUND: *Gradual swelling of crowd outside the prison.*

MEJIA

Look at the rabble waiting to see us die! Listen to them!

MAXIMILIAN

What are they saying?

MIRAMON

Wait . . . I cannot catch the words

VOICE

(*Well off mike, in crowd*) Long live Democracy!

MAXIMILIAN

Who dares to drown such a cry as that! (*Music*)

The first perspective one encounters in this scene is the illusion of a yelling mob away from our scene outside the walls of the prison, a distant and indistinguishable yelling crowd. As the scene opens, the microphone is with Miramon. On his very first speech Maximilian walks in on the beam of the microphone. If he did not walk in on the beam, our ear would have assumed that he was standing with Miramon. As the scene progresses, the sound of the mob gradually rises in volume. This would give us the impression of the crowd moving closer to the prison or at least to that part of the prison where our characters are standing. As a matter of fact, at the conclusion of the scene the crowd has moved close enough finally for one line to come through and be heard—the line, “Long live Democracy!”

There is no hard and fast rule to be laid down that will determine *with* whom a microphone stays. Arbitrarily, a director seizes upon the character who at any one moment in the story furthers the dramatic continuity of the story, and he proceeds to build his microphone perspective around that person. Sometimes effectiveness may be gained by putting a minor character on microphone and placing the protagonist or a more important character farther off microphone. For instance, if the protagonist is about to address a convention or assembly of people, the chairman of the assembly may conveniently be placed on microphone, and the protagonist may proceed to address the assemblage from an off-microphone position. Such a procedure would give a clear-cut picture of roominess, and if the scene is supported by adequate sound effects of the people making up the assembly, the illusion of a person addressing an assemblage is complete. To carry out this specific auditorium picture further, an additional effect may be achieved in having such a speaker, at a convenient point in his speech, move toward the microphone and, when he reaches it, proceed to project his voice slightly off the beam of the microphone. To a certain extent, this will give the listener an effect similar to the one created in

the motion-picture technique of "panning" from a distance up to an object, *i.e.*, establishing a distant camera focus and, while the object is being gradually approached, continuing to change the focus until close-up is arrived at.

From the standpoint of the listener, it is extremely inadvisable for the director to change an established perspective in the middle of any given scene and jump to another perspective. The moment the ear comfortably assumes that a story is proceeding along one perspective line and is then forced to make a sudden adjustment to follow the characters in new and unexpected perspectives, violence is done to the imagination. The mind and the ear clash, or rather, the ear betrays the mind. If, within a given scene, the director wishes to change perspective from one character to another, the positions of the two characters must be bridged by having the character on microphone walk off beam while the other walks on beam. The one who has been *on* beam proceeds to carry his portion of the scene from *off* microphone, and the one who has been *off*, in similar fashion, proceeds *on* the microphone. Such an interchange of relative positions is effected gradually with no sudden wrench or violence to the aural picture. At no time should a character or a sound be established as from off microphone and instantly proceed to the on-microphone point without warning or rational dramatic license, nor should a person or sound be established as on microphone and be instantly off microphone without similar rational dramatic preparation. Everyone has heard careless production—in such a scene, for example, as where a character is established at some fairly remote place from the microphone, possibly outside a window, when suddenly, for no reason, his voice appears on the microphone as if it had flown miraculously from outside the window to the divan before the fireplace, or wherever the interior scene happened to be. How he got from one place to the other is not explained in terms of intelligent perspective.

In establishing a perspective, in the absence of a clearly defined perspective in the script, the director is within his rights dramatically of making an arbitrary decision as to which character at the very beginning of a scene is *on* microphone or with which character the microphone stays. He might with equal force or with equal dramatic effect have decided that the microphone is with another character or with another sound-effect pattern, but,

whichever choice of perspective is made, the sole rule from then on is that the director stay with it and not turn aside to another perspective unless the transition is logically prepared. If a perspective is wrong, he should sense that it is wrong at the outset and correct it immediately. If, during a dress rehearsal, it is discovered that a perspective is wrong, it should be corrected at the conclusion of the dress rehearsal. Sometimes an entire playlet or scene must be played without interruption to determine whether a perspective is the right or wrong one.

Let us take another scene illustrating a succession of simple dramatic perspectives. The scene describes a last-minute plea by the Princess Salm, a friend of the Emperor Maximilian, to Juarez, the Little Indian, on behalf of the condemned monarch.

Weary but victorious, Juarez sits with his secretary before piles of letters.

1 SECRETARY

And here is a cable from the Czar from Russia. Shall I read it?

2 JUAREZ

No. It will be the same as the other monarchs sent us pleading for the boy's life. (*Bitterly*) Our European royalists grow human when it is too late. The execution will be carried out.

3 SOUND: *Knock on door.*

4 Enter!

5 SOUND: *Door opens.*

6 AIDE

The Princess Salm is in the corridor; she wishes to speak to Your Excellency.

7 JUAREZ

Show her in.

8 AIDE

Very good, sir.

9 SOUND: *Door closes.*

- 10 SECRETARY
I'll wire these answers immediately, Your Excellency.
- 11 JUAREZ
Good. And see that I am not disturbed. The Princess is a dear friend of Maximilian.
- 12 SOUND: *Open door.*
- 13 SECRETARY
Yes, sir.
- 14 SOUND: *Close door.*
(*A few minutes pass and then:*)
- 15 SOUND: *Knock on door.*
- 16 JUAREZ
Enter!
- 17 SOUND: *Door opens.*
- 18 PRINCESS
Your Excellency.
- 19 JUAREZ
Please sit down.
- 20 PRINCESS
No . . . thank you.
- 21 SOUND: *Door closes.*
- 22 JUAREZ
Very well.
- 23 PRINCESS
I need not tell you why I am here.

This much of the scene is all that we need to examine a simple, interesting, accurate, and at the same time effective use of sound perspective to create a scene. The scene obviously starts with both Juarez and his secretary "on mike." Both characters

are speaking normally at normal voice level. Speeches 1 and 2, therefore, are on mike. There comes a knock at the door, obviously at a little distance from the established position of the two men. This sound (3), created at the sound mike, will be an off-mike sound to convey a sense of distance. Speech 4, the continuation of Juarez' speech 2, is on mike. Sound 5, the door opening, is off mike. Speech 6 by the aide must be where the door that he has opened is. It is therefore off the cast mike, and the actor reading it may read the line 4 or 5 feet off but on the beam or a slight distance off the beam of the mike. The proper place and the proper lift or intonation of the voice to accent further the perspective of the character's being some distance from Juarez and his aide must be tried, listened to, and established. Speech 7 is on mike; speech 8 is off mike; sound 9 is off. Speech 10 is read on mike by the secretary, but he will read the last three or four words as he steps back on the beam of the mike to create the illusion of walking away from Juarez toward the door from which he will presently make an exit. To heighten this illusion, speech 11 of Juarez would be lifted slightly, that is, read with that slightly higher propulsion of tone that we assume when we address someone who is a distance away from us. Sound 12, the sound of the secretary opening the door, is "off mike," because our ears have followed him off, and he reads speech 13, off. Sound 14, that of the secretary closing the door, continues the off-mike perspective. Sound 15 is an off-mike knock on the door. Speech 16 is Juarez on mike, lifting his voice to the Princess outside the door. Sound 17 is the door "off" opening, and speech 18 is the Princess off the beam of the cast mike, or possibly on the beam but 4 or 5 feet away from the mike. Speech 19 is Juarez on mike. Speech 20 is the Princess still off mike because she must still be off, presumably to close the door behind her. Sound 21 is that of the door closing, off; speech 22 is Juarez on mike, and speech 23 is the Princess reading her line, "I need not tell you why I am here," walking toward the mike on the beam until she has reached the normal on-mike position. During this entire scene at all times Juarez has been on mike.

Such a simple scene miked as shown above is the type met with constantly in every dramatic script. It presents a very simple picture of perspective, and yet, unless the cast are carefully

rehearsed in every single detail, no illusion of depth will be forthcoming unless it happens by sheer accident or by the most adroit manipulation of the volume controls by the engineer.

What does it sound like? The director asks himself this question and immediately answers it in only one way. He listens to it. He makes the actors and the sound engineers go through the routine—and listens. He listens *hard*. Only by *listening* long and hard at rehearsal does the director of a radio drama take air with a performance that an audience will listen to. He listens to the combination of lines and sound effects and judges the result against his memory of what the two together *should* sound like. Does the combination represent the closest possible aural image of the action or event the medium can achieve? If it does not, how best shall that image be created? What adjustments should he make? He can make many. He can make a constant succession of small changes to bring about the correct picture, and after every change he will *listen* to the altered situation and will judge how much closer the change has brought him to his aural objective. Change and listen. Change and listen. Change and listen. That is the routine he must follow over and over again.

Consider some of the conditions surrounding a given simple action that in one way or another will change the result, the reading of a line, for example. A line may be read at normal level on the dead side; it can be read closer to the mike or farther from the mike under the previous conditions; or it may be whispered close to the mike; or projected from slightly off beam; or projected from far back off beam; or projected from far back on beam. It can be read with the speaker's back to the mike and directed at a live wall; it can be read in the same way and directed at a dead wall; it can be read on a microphone, the characteristics of which have been changed by filtration, which is a method of changing the character of sounds picked up on a mike by eliminating certain of their frequencies; it may be passed through a reverberation chamber. In short, an endless variety of changes may be made just on the reading of a line, purely apart from changes in the histrionic reading of the line. Remember, too, that in addition to the changes, the engineer in the control room may still further vary the character of the line by altering the volume in every one of these instances. He may

raise or lower the volume control on every single alteration of the mechanical or perspective changes made on the microphones. It is obvious that a change in volume adds a perceptibly different effect to the dramatic production of the line. And just as a line may pass through all sorts of mechanical and perspective changes, so a sound effect may go through as many or more changes. Consider a simple manual sound effect, the rapping of a gavel. It can be hit close to or far from the mike; on beam or off beam; against a dull, non-resonant substance; or, to give resonance to the sound of the blow, it can be hit against any wooden box-like affair that is at hand in the studio. It can be hit against the wall or the floor; against a metal or wooden chair; against any object that is covered with cloth, or uncovered; against any object or combination of objects; and in every instance the sound that comes out of the play-back monitoring loud-speaker over the director's head in the control room has a different quality, only one of which is the right one for the director's purpose and will carry out accurately the realistic purpose of the script. And not until the director hears the right sound does he select it and permit it to become an integral part of the script.

Just as the director at the mike rehearsal hears each single sound by itself, so must he begin to combine sounds where they occur simultaneously or in quick succession, and each sound in the combination or series must satisfy the perspective demands of the situation. If, for instance, the sound is that of the door of an automobile being opened while the engine is idling and the action is supposed to take place outside a house some distance from where we are presumably standing, if the car idling is off mike and the car door is opened full on mike, the result is incongruous and has no connection with sense or reality. When, however, the door is placed far enough off the beam of the sound mike and is opened quietly, with just enough volume to suit the perspective need of the situation as that need is estimated by the director, then the combination of sounds is clearly and effectively established, and they become part of the completed production of the script.

In this procedure of establishing levels of sound and perspective, bear in mind that the level of volume of any one sound is a mean between the amount of sound created in the studio and the amount of sound the engineer allows to be modulated

on his instrument panel. To take an example: if a door is closed by the sound effects engineer with the normal amount of impact necessary to close a door, the engineer in the control room can alter that normal amount of sound. By closing down the volume-control dial of the sound mike, the sound can be reduced to a very small volume. If no other microphone in the studio is open at the time he does this, a very small sound is produced on the loud-speaker in the control room. If another microphone—a cast mike or an orchestra mike—is open at the time he does this and is not too far away, some of the volume of sound made in closing the door will spill over and be picked up on the other mike. Care must be taken not to allow sounds made on one mike to spill over into the range of another mike. Often this cannot be avoided completely, but, as pointed out in an earlier chapter, this is partially accomplished by placing the axis of one mike perpendicular to the axis of another. Obviously the opportunity for spill-over of sound from one mike to another is facilitated when the mikes are so placed that their live sides are in a parallel plane. The engineer is aided in “riding gain” (balancing the amount of sound that flows through all his microphones, so that the level of sound volume remains constant) by the use of sound-absorbent screens to separate working areas around microphones. If the level of sound at which an orchestra is playing is so heavy that in spite of the efforts of the engineer to bring the “gain” down on his orchestra mike, music spills over and is picked up on the cast mike to a point where he would be compelled to lower the volume on the cast mike, destroying acting sound levels, it is then imperative that sound-absorbent screens or gobos be set up to assist him in “riding gain.”

It should be repeated that next to an active adult intelligence, the best equipment a director can bring to a control room is a sensitive pair of ears. With practice it is amazing how quickly the ear can become accustomed to discriminating between all kinds and all qualities of sound. Often the distance of 3 inches closer or farther away from a microphone will alter a sound sequence so that a director can spot the difference instantly. Asking an actor to move a shade to the right or left frequently will bring a scene into sharper vocal focus. To allow him to remain where he was might have seemed to the trained ear to be an obvious distortion of sound. The non-professional ear

may not know the precise technical reason why a show is bad, but a few poor perspectives can start the listener off toward another program very quickly. The director should work over the same perspective until he is satisfied that it creates the aural picture he intends, and although there is such a thing as *overrehearsal* of a cast and technicians, that has nothing to do with a director's adjusting a perspective until it meets with his approval. Sometimes a sound engineer or an actor misses one essential word of the direction given him and will persist in doing the wrong thing. He will read the line incorrectly or will walk into a scene at the wrong spot or will take up a cue incorrectly or do any one of a dozen things that will be just sufficient to destroy a delicate adjustment of sound perspective or of balance. It is then the director's duty to rehearse the spot over and over until it is done to his satisfaction and the missing bit of directorial mosaic has been fitted into the offender's concept of his part.

Throughout this discussion of the microphone rehearsal, it should have been obvious that in addition to the director there is another person in the control room who plays a most important part in the development of the broadcast. Everything that goes out over the air is the concern of the engineer, and for this reason he should have at least a general idea of what the director has in mind. A good engineer will want to know what that is, and he will not be shy in asking. A conscientious engineer marks his copy of the script as zealously as any member of the cast. Engineers would not be human if they did not vary in capability and sensitivity to the job before them. They have the passion for accuracy that usually distinguishes the man who has to do with precise scientific affairs, and it is surprising how sensitive many of them are to shades of dramatic interpretation. Although it can rarely be said of them that their primary interest is drama, suggestions from them can often be of great assistance to a director who has sense enough to ask for them. When he has miked a sound pattern several times and is not sure which to use, often the engineer, for good reasons of which the director is unaware and which the engineer will make known to him, can throw the deciding vote. A very complicated sound pattern involving cast, orchestra, and sound effects may be rehearsed and developed. Within the space of 10 seconds, an

actor has to read a line in a certain way; a mob of extras has to yell in a certain way upon a very minute cue; at a certain finely developed spot in the middle of an actor's speech the orchestra must start to play background music at a specific level; two revolver shots have to be fired on cue by the director; and somewhere along the way a chorus must be cued in. In other words, a great many things have to take place in sequence in a very short space of time, and the director, exercising a critical faculty, must hear everything and possibly change everything. To do all this demands a sensitive ear and it is no overstatement to say that it takes a great deal of concentrated listening. In *developing* such a complicated pattern, it is impossible to hear everything and be able to correct or adjust every single element in the pattern that went wrong without repeating the entire routine many, many times. The ear and the attention tend to linger on only a few of the elements and are assailed by so many that they select, they discriminate, they fasten on a few and let the others go. The engineer's attention and ear may have picked out some of the elements that the director's ear and attention have rejected, and if he avails himself of the engineer's suggestions he can save himself much rerehearsing. The engineer can tell, for instance, that the shots were too close to the mike, that the orchestra balance was too heavy against the voice of the cast, and that some of the extras took the wrong cue. No Chinese philosopher is needed to conclude that many times four ears are better than two.

Remember that apart from perspectives, balances, levels, script marking, cues, and all the other concerns of radio production, it is during the microphone rehearsal of production that the director interprets the play. It is then that he imposes his intelligence upon the dramatic content of the script and sees to it that the actors in the cast evoke from their parts the character that fits into his idea of how the play should be performed. All the aesthetic and cultural objectives that were in the writer's mind when he wrote the script must be present in the director's mind, and when he imposes upon them his own interpretations, he passes them on to the cast through his direction.

CHAPTER 8

THE DRESS REHEARSAL AND AIR SHOW

With the completion of the mike rehearsal, the next major production step is the dress rehearsal. Before the dress rehearsal is undertaken, however, if time permits, give the cast a rest for five or ten minutes. If the budget permits the use of an orchestra and if the entire rehearsal has been well scheduled, the mike rehearsal should be finished at about the time that the orchestra appears at the studio for rehearsal, prior to dress and air. Sometimes the rehearsal of the orchestra consumes a half hour or more before the dress rehearsal, and this may represent additional relaxation time for the cast.

The presence of the director is absolutely necessary at the orchestra rehearsal. Remember that a day or two before the production goes into rehearsal, the orchestra leader and the director have conferred about the musical needs of the show. Now the musical director enters the show and henceforth is one of the most important elements of the broadcast. The orchestra chairs are set out in a rough general setup facing the mike headed from the live toward the dead end of the studio, and the orchestra is balanced. Our concern at the moment is not specifically the proper balancing of the orchestra; that problem has been treated in a separate section of this book.

The leader now proceeds to rehearse each orchestral cue separately and in order, and as he rehearses each cue the director listens and gives the cue selection his approval or indicates that it does not fit into the dramatic situation. If the cue is approved it is given a number, and the members of the orchestra place it in the proper order on their stands. Every single music cue is numbered in rotation from cue 1 straight through the script to 100, if need be. Once music cues are numbered they are given the same numbers in the director's and engineer's script and are henceforth referred to by number rather than by title. It is simpler during the interval between the dress rehearsal and taking

air, or during the course of the broadcast, to refer to a cue by number. If a cue should be cut out of the show while it is on the air, the orchestra leader needs only to raise his hand and indicate by number that he wants cue 7 or 9, or whatever cue it may be, discarded.

If the director of the broadcast does not approve a cue, the leader rehearses an alternative, sometimes trying out several before he hits upon a cue number that represents musically to the director the dramatic mood or purpose of which he has need. Often a director approves a number tentatively, waiting until the dress rehearsal is completed, at which time he will have heard the cue played in its proper dramatic context. In such instances the dramatic context more clearly rivets the cue into place, for when cue music is heard in the exact spot where it belongs, played against the actors' voices, it is immediately seen to belong in the script or is so completely out of key with the play and situation that a new and different cue number must be substituted. As soon as the director agrees with the leader that a given cue is to be included in the broadcast, the director should tell him exactly how the cue is to be used dramatically. The instant in the script where the cue occurs to the very word and period should be pointed out to the leader and marked by him in his copy of the script, subject, of course, to subsequent change at the conclusion of the dress rehearsal. Does the music come in full, or does it come in pianissimo or *mezzo forte*? Is it what is known to musicians as a "sock" cue? In other words, does it come in fortissimo? Does it "sneak in" under dialogue, and at the conclusion of the dialogue does the leader bring the orchestra to a crescendo to fortissimo and then down in a complete decrescendo and finish? Does the cue trail off to nothing, or is it brought to a cadence? If the music does any of these things the leader must be told. During the orchestra rehearsal, the engineer listens carefully to everything, marking his script so that at all times he is prepared to mike the levels of volume that will be picked up by the orchestra mike.

According to union musician rules, the orchestra must be given a 5-minute rest period in every hour. When the rest period is concluded, everyone is called into the studio—the orchestra, cast, engineer, announcer, sound effects technicians. Everyone who has anything to do with the broadcast should be present at the

dress rehearsal, when the show is played from beginning to end. From this point on the director must call upon every single sense that will assist him in coordinating all the elements of the broadcast. Start the dress rehearsal early enough to provide at its conclusion for a period in which correction and adjustment can be made of those things that require correction, improvement, adjustment, or complete excision. Be sure that there will be time enough before going on the air to make the necessary adjustments to timing the show on the air. Try to provide for sufficient time to make cuts that will not do injury to the smooth and rational continuity of the drama. Just before starting the dress rehearsal, take a quick final test of the balance of the orchestra. If the mike is not directed perfectly at the orchestra to receive the best and clearest balanced pickup, if it is too close to the first violins, if the first violins are too far away, if the predominance of any one instrument or section of instruments over the rest is heard, if the orchestra sounds too live, if additional gobos need to be set up to give the engineer better control of the balance of the entire show, if the piano has to be moved in closer to the mike or moved farther away—if any or all of these things have to be done, now is the time to do them. It is better to do them now and have a well-balanced dress rehearsal than to have a badly balanced dress rehearsal creating a distortion through which the entire show will have to be judged and corrected by the director.

A certain misconception concerning the function of the dress rehearsal is commonly encountered in the radio field. It is so widely at variance with the attitude toward the dress rehearsal in the theatre that any slight attempt made to correct it cannot help being a step in the right direction. There are radio producers who feel that a dress rehearsal may be a perfunctory and routine performance and that anything goes on the dress so long as the air show is played to the hilt. A great many of these producers have little or no theatre backgrounds. There are innumerable directors in radio telling their betters how to act when they haven't the faintest knowledge of the difference between upstage and down, let alone the—to them bewildering—stage-left and stage-right convention of the theatre. It is, of course, conceivable that a man or woman without knowledge of these things, without ever having been on the stage of a theatre can become an able radio director, and there are many who have;

but it is a better than fair assumption that those who are successful have respected the source from which radio must return again and again in one way or another to gather new strength. And the theatre dictates that a dress rehearsal shall be a complete, well-rounded, perfect performance. There is a superstition in the theatre that a bad dress rehearsal means a good first public performance. It is more than likely that this is one of the myriad consolations that economically insecure performers have brought to bear upon their continually harassed conditions. They find themselves in one bad play after another, and, confronted with still another bad dress rehearsal of still another bad play, they calm their fears by evoking some nonsense that they would laugh at in their more rational moments. A dress rehearsal anywhere should shoot at perfection. The closer to perfection it comes the less there is to fix up for the first performance. If, in radio, a director enters upon the dress in a spirit of hit or miss, feeling that there is still time to fix things up, he will find that there is never quite enough time to fix up all the things that go wrong. It is a fact that there are performers who are psychologically so constructed that they can never give a complete performance at a dress rehearsal. That is understandable. Such actors, however, always give a well-thought-out dress-rehearsal performance. They are feeling their way, and there is never any doubt that plus values will be forthcoming on the air from such artists.

A good director is also a good disciplinarian, and a good disciplinarian does not tolerate an attitude during dress rehearsal that it is only a dress rehearsal and not the actual air show. There are times in the course of the production of a show when a little fun or even horseplay is good for the soul and equally good for the show, but from the dress rehearsal of a dramatic show right through air, strict attention to business should be the rule. To digress to mention of the theatre again, it is a fact that Miss Ruth Gordon, one of the ablest actresses of this generation, never engages in idle conversation with anyone from the moment she enters the theatre, even though the play in which she is appearing may have been running a year. While she is in the theatre her business is the play, her part, her audience, and a high sense of devotion to all three. Such an attitude brought into

radio studios could not help going far toward lifting the level of radio drama and radio acting.

A radio drama may be produced in two ways, depending on the distribution of duties during the course of a dress rehearsal and the broadcast. A radio director may do the entire job himself, give cues, check levels, make notes as the rehearsal progresses, time the show, and take care of every item of production with the exception of actually riding gain, or he may have the assistance of a third person not hitherto mentioned, the production man. The function of the production man during the dress rehearsal is to keep a running timing of the show in seconds that can be broken down, cut up, chopped in two, in quarters, or in any fractional divisions that may be asked for. He should take down any and all notes referred to him by the director. A good production man also makes his own notes of what he sees that may be corrected with profit. These he refers to the director, who accepts or rejects them as he sees fit. If the director has no production man to assist him, he must perform these duties himself. The director should give the cue to start the dress rehearsal and at the same instant start his stop watch, which thereafter should never be far from his hand. If, for some unavoidable reason, it becomes necessary to stop the dress rehearsal, at the very instant that it is stopped the watch must be stopped. The stop watch should be of the progressive type—that is, once stopped, it continues from the spot at which it is stopped until it is stopped again. It is not until the complete timing is established that the watch is sent back to the zero mark. Stopping dress rehearsals once the rehearsal is under way is not good radio production practice. Unless the director is widely experienced, it can raise havoc with the record of timing. There are instances where, because of great pressure, an emergency dramatic broadcast must be put on. The dress rehearsal and a mike rehearsal then become one and the same thing. In such instances, fortunately rare, the director mikes his perspectives, interprets the script, and acquires an accurate running time of the show all at the same time. This method of putting on a broadcast requires a very practiced and precise use of the stop watch, repeatedly picking up the timing at the exact word upon which the rehearsal has stopped. To repeat, the timing of a show may be written

over the exact word where the timing falls, or it may be placed on the outer right-hand margin of the script. The former method is possibly the better way for the talks broadcast, where cutting of sentences is resorted to in order to bring the talk within the limit of the time allotted to the broadcast.

For the dramatic broadcast it would seem best to place the boldly written timings on the right-hand margin of the script. Then they are not buried in the context where, under pressure of taking care of many production details not present in the talk broadcast, the director may not quickly find them. Since the purpose of the dress rehearsal is to produce ideally the perfect show, it follows that all aberrations from the perfect show must be noted for correction. If the director is concerned with watching the stop watch and at 15- or 30-second intervals setting down timings on the right side of the script and constantly giving cues and conferring with the engineer on balances and sound perspectives, it seems almost too much to ask that he write down notes having to do with corrections of actors' performances, faulty line readings, delayed cues, anticipated cues and reminders of the countless things that must be corrected before the show takes air. Each director develops ways of doing things that suit him best. One method of noting spots to be corrected is to mark with a bold asterisk the line where the mistake occurs. This necessitates going through the script later to find the asterisks. It means that every single page of the script must be scrutinized for a marking, and if a page is neglected, a very important correction may be overlooked. If corrections need to be made on only ten scattered pages in a forty-page script, it seems silly to look through every page for notations, taking time that might better be used for something else. Frequently there is barely enough time to pass on to the cast such corrections as you have without being compelled to search for them in the bargain. However, if this seems to be the better method—and to some it is, because it is practiced widely—some sort of marginal note in addition to the asterisk should be made quickly, a note that in one or two words serves to recall just what went wrong at the spot where the asterisk is placed. It is better to make the note than to depend upon memory to recall for you what the mistake was. If something flagrantly wrong has occurred, memory serves, but often the mistake is a slight one and does not impress itself sufficiently

on the mind to be recalled readily when corrections are passed on to the cast.

An excellent way to take notes during the dress rehearsal is to have ready several blank sheets of paper on the talkback desk close to the stop watch. As the mistake occurs, mark the spot in the script with the asterisk, but note on the blank sheet the page where you put the asterisk and the note telling in a word or two what should be corrected. If two mistakes occur, mark down two notes under the single page heading. In this way at the conclusion of the dress rehearsal there will be a record only of the pages where mistakes occur, and no time will be lost in going through the script on the hunt for asterisks. In passing on the corrections you simply tell the cast to turn quickly to page 8; they do so; you make the correction and, without lost motion or time, you tell them to turn next to page 12 and do the same thing; and so you continue till all corrections have been made.

Any method of working that will enable you to get many things done with the least amount of bother in the period following the dress rehearsal prior to taking air is bound to bring dividends. The less hectic that period is and the more skillfully the director uses it for making corrections the better the final result is bound to be when the show goes on the air. Anyone carrying a heavy suitcase who has run for a bus or a streetcar on a hot day remembers the time it takes to regain composure once he has got aboard. One's feelings are, to put it mildly, a little mixed. A cast given a heavy load of helter-skelter rushed corrections right up to the last moment before going on the air has feelings that are somewhat akin. A composed cast confronting the kilocycles is considerably better than one that is bewildered and frenzied. What are some of the things that may be noted during the dress rehearsal and quickly corrected after it is finished? There is no limit to them. They are literally infinite in number, but there are certain fundamental things that every director should know and be ready to correct.

MICROPHONE FAULTS

The actor was "off" beam when he should have been "on" beam.

He was "on" beam when he should have been "off" beam.

He was too far back on the beam.

He was too close to the microphone.

He was not close enough to the microphone.

He rattled the pages of his script so that the paper noise could be heard. His script continuously grazed the microphone.

The voice was too *soft*, forcing the engineer to raise the volume, which made the voices of the other actors, which were originally loud enough, too loud.

The voice was too *loud*, forcing the engineer to lower the volume, which made the voices of the other actors, which were originally loud enough, too soft.

The voice was so loud that it blasted on a word or phrase that the engineer expected to be loud but not so loud as the actor read it.

Crowd noises and ad lib sounds or shouts intended as a background to accompany dialogue became so heavy that the engineer had to pull down the over-all volume, making the dialogue so low in volume that it failed to be clear to the listener.

Lines were read so loudly and rapidly or from so faulty a position with relation to the microphone that they lacked definition and clarity.

Lines were read loudly enough to be heard on the high-fidelity monitoring equipment in the control room but with insufficient propulsion of volume to enable the engineer to modulate properly. Some voice projection is necessary.

Unthinkingly, as the actor progressed into a scene, he dropped his head and continued to read down toward the script rather than up full at the microphone.

Unthinkingly, as the scene progressed, an actor brought his script up until it wholly or partly blocked the beam of the microphone so that his own or other's words could not get past.

An actor coughed into, touched, or kicked the microphone.

One or more members of the cast failed to wait for a cue from the director.

Members of the cast failed to look occasionally to the control room for a check or verification that all was well with their miking performance.

One actor got in the way of another and prevented accurate, fine miking.

The actor thus blocked failed to nudge the "mike hog" out of the way, as he should have done, to everybody's, and particularly to the director's, delight.

In instances in which the cast and the orchestra were being picked up on the same microphone, one or more actors stood in the beam while the orchestra was playing.

An actor was daydreaming when his cue came.

Cues were not picked up—*i.e.*, instead of preserving the natural flow of conversation, keeping dialogue flowing in an even, uninterrupted line, periods were regarded by an actor as slumber hours, and time sped by while he contemplated speech. This is a most common fault, often brought to fine flower in radio drama. More surely than any other single trait does it betray the inexperienced actor.

Cues were “jumped.” Before the words were completely out of the predecessor’s mouth, an actor was off on his own verbal horseback.

During the dress rehearsal, a great many mechanical things may have been wrong with the sound effects that should have been noted by the director. Faulty perspectives may be discovered, though, in general, they are subject to only minute changes when the dress rehearsal has been completed. After all, the perspectives have been created and developed during the microphone rehearsal, and if they have been wrong they should have been changed then. Sometimes it happens that in the uninterrupted playing of the entire script some perspectives must necessarily be changed because in the flow of the complete dramatic context it is discovered that they are incorrect. A dress rehearsal is a sort of bird’s-eye view of the whole show that may reveal perspectives in a new light. Such a bird’s-eye view may dictate the elimination either of a single sound effect, a combination of effects or sound patterns, or it may suggest that a new and different effect or sound pattern should be introduced. Often the absence of an effect may be so obvious, or the need for one, either for the sake of realism or clarity or purely for a heightening of the aesthetic value of the whole drama, can seem to be so pressing during the playing of the dress rehearsal that the director is constrained to put one in.

Sound engineers should be corrected for any incorrect cues—or taking a wrong one, a late one, or an early one. The loudspeakers picking up the recorded sounds may be playing with too high a frequency level or too low a level for any given record. Sounds may have been produced at too high or too low a level of

volume, either on the turntable or manually. If time permits, quickly run over the spot where the effect was incorrect at the dress rehearsal. Mike it either by itself, separated from the context of the drama, or mike it against the actor or actors reading the exact cue. In this way the correct level of volume and of perspective can be reset. All misunderstandings between director and sound engineers about sequences and cues of sound patterns should be cleared up. Faulty records should be thrown out and new records substituted. Mechanical effects that were supposedly sure-fire and failed should be made foolproof.

Most sound engineers are extremely ingenious. In the heart of the most innocent and naïve-looking sound effects technician may lurk as fanatical a passion for trial and error as ever beguiled an Edison or Galileo. Scratch a sound effects man and you will find a minor-league Steinmetz. Nay, scratch a sound effects man and he will come up with eighty-two ways of staunching the blood, eighty of which will be fantastic Rube Goldberg machines that won't work. It is not unusual for one of the boys to rig up a rain machine that starts in a stable three blocks from the studio, comes over the roofs, down the chimney, and ends with rice blowing out of the air conditioner up against a dead wall in the studio, picked up on a microphone set in a barrel! Beware of these lads. They will do you dirt, not viciously, from a desire to harm, but wholeheartedly with a will to help. If you have so far forgotten yourself as to allow them to use one of their elaborate and nifty new gadgets under the assurance that it will be bound to work and you find that it is not what it should be, don't hesitate to eliminate it from your show and go back to one of the hoary old effects that has been working well since the first performance of "Gorboduc."

During the progress of the dress rehearsal, mistakes made by the engineer are usually checked by him as they are made. Invariably the engineer sees the mistake as quickly as the director. If, however, you have been producing the show under non-studio conditions, under remote-control conditions—for example, where both director and engineer have been wearing headphones and communication has been difficult during the dress rehearsal—pass on to the engineer such corrections of engineering and microphone production as you feel are needed.

The dress rehearsal has shown the director what is wrong with the show. He has taken many notes. He has timed the show. He knows whether he has to cut and how much must be cut to make the show the required length. He also knows if he has insufficient show for the required length and that in that case he must provide for stretching the show. From the conclusion of the dress rehearsal to the moment the show goes on the air the director must utilize wisely and efficiently every minute remaining to him. If the corrections are few and the necessity for cutting or adding is slight and there is ample time, the situation is a comfortable one, but under ordinary conditions the time from the end of the dress up to air must be organized in order that the best results can be realized from whatever precious time is available. If much of the script must be cut, the cutting should start at once. The show should get down to playing time first, and whatever time remains after cutting should be used for improving the show. If the director starts to correct first and leaves the cutting until last, there may not be enough time left to cut down the running time of the script, and in that case the broadcast goes on the air with too much show. It will then be necessary to run the show at too fast a pace or cuts will have to be made while the show is on the air, a procedure that should not be resorted to unless absolutely necessary. It takes time and judgment to cut a show skillfully. If it is cut wildly, it may be cut badly; to cut properly, as much time as possible of the time remaining until air should be utilized.

When the cuts necessary to bring the show down to proper running time have been made, the corrections should be passed on to everyone concerned. Whether the director goes out into the studio and makes them or remains in the control room and passes them out through the talk-back is a matter for individual choice. If a correction to a member of the cast or to the orchestra leader is one that should be made privately, good taste would dictate that it be made personally rather than shouted through a talk-back. I refer here, of course, to adjustments that concern no one but the offender, where embarrassment might result from their being bruited aloud for all to hear. Orchestral corrections should be made first and quickly. The men can then be sent out of the studio at once, and there will be less din

than there would be with a group of men present who are eager to get out and smoke. They should be ordered to report back a short time before air on the chance that there may be some last-minute orchestral change to be handed on to them and, in any case, in order that they may be informed if any cuts have been made in the script that will necessitate the omission of a number or a change in the routine of cues.

There is a technique of passing on corrections and cuts. First demand and get every ounce of everyone's attention. The director's authority must be felt now if it is ever to be. If you have reached this stage of the rehearsal and cannot get or hold attention, you have no business being in the studio. Use a voice loud enough to be heard by everybody. Judge that volume yourself. Make absolutely sure that everybody has received the same cut. When a cut has been made, have the actors quickly read, not act, a few lines back of the cut and read through until it is apparent that the cut is clearly understood by everybody. Do not pass on to the next cut or correction until by general assent you are sure everyone has received the cut that you have just passed out. Be clear about the cut, change, or correction that you are giving out to the cast. Let there be nothing equivocal about changes. *Let everyone know that this is how it must be! This is how everyone must have it!* Cutting a script is facilitated if the script has been typed in the proper manner. Speeches should be numbered and the numbers typed at the left-hand margin of the page. It is then very simple to call out to the cast to turn to page 8, speech 92, or whatever it may be. When they have done so, the speech number is then repeated, and the beginning and end of the cut are announced. Speech 92 from such and such words to the end or middle of speech 95, to and including such and such words—this is a clear and readily understandable manner of making a cut. A cast moves through this portion of the putting on of a broadcast in the same manner that a class of children pass through a difficult teaching period. The whole class moves only as quickly as the slowest pupil. Do not go ahead of the laggards. Many good actors tend to get excited if they are rushed through cuts and changes and, when they become excited, are prone to get things wrong and do irreparable injury to a broadcast. The shier ones will be afraid to admit that they have not kept up with the rest

of the class and will often go forward when they should have made absolutely sure of themselves and their script before they did so. Give changes and cuts with sympathy for such people, for if you lose patience with them you only bring about the result you are seeking to avoid—panic!

During this period the director may be the busiest person imaginable, but he should never get rattled. He must quickly answer questions and resolve doubts. No question should be too idiotic to answer, because sometimes, through the hazy words of an idiotic question, a dangerous defect in the production may be uncovered. A direction that may have been only partly and imperfectly given, something the director has started to talk about at an early stage of rehearsal and left unfinished, intending to take up later but never doing so—anything as much the director's fault as the fault of the person asking the question may be at the bottom of it.

Make all your decisions quickly. In the theatre, where a director has from 1 to 5 or more weeks to correct or change or help mold the characterizations of the actor, there is obviously ample time for conference, for discussion with the actor of the hundred and one shades, accents, meanings, colorings, and tones that go to make up his interpretation and to integrate it with those of his fellow characters and with the entire context of the drama. In radio there is no such luxury of time to accomplish the same end. What has been done in this direction has been accomplished from the very first reading of the script, through the mike rehearsal, and now, with the completion of the dress rehearsal, the almost completed outline of each actor's performance has been presented to the director's eye and ear. The successful radio actors are "quick readers." From the first reading they can size up a part and from the first few lines of the character get a quick glimpse into which human category it falls. The character is immediately personalized. "He" (the character) is sly, stupid, naïve, charming, mean, embittered, revengeful, hearty, timid, boastful; "he" is any one or any combination of human attributes the writer has made him; and the able radio actor quickly begins to project the necessary characterization, often with surprising penetration and insight. It is this ability of the experienced "quick reader" that has nurtured the growth of many incompetent radio directors. By

engaging experienced actors who can deliver quickly, without assistance, a full-blown and competent though stenciled characterization, an ineffectual director can be protected in his own incompetence and be borne up by willing histrionic hands. Such a director carries no burden; often he is unaware that there is one attached to his office. He simply knows that the job has been done very well, and he cannot be blamed if he attaches such high importance to the work of the cast that he proceeds to engage them over again—which is what the actors had in mind in the first place. The facility of radio actors in creating swift, workable characterizations is further enhanced by the general sterility and often downright debased condition of what passes for radio writing. The old character stencils appear so frequently that it would sometimes be hard to believe that a writer would have the effrontery to put them down on paper, but they leap up again and again. Canny actors have only to give a quick glance at page 1 to recognize an old friend popping up under a new name. The whiskers may have a different color and be trimmed to a different length, the actor may have met him only last night on another station, cavorting in a wholly altered set of dramatic shenanigans, but it is the same old hardened rubber stamp, and the actor knows him for what he is. With a slight twist of the gullet and a tightening of the trachea, the actor grabs him literally by the throat, and the director has his job done for him—done for him if he wants to leave himself at the actor's mercy, done for him if he knows no better and, perhaps, when all is said and done, he should thank Heaven for sending him an actor with accomplished tonsils.

It is because of this very virtuosity that one encounters in radio acting that the director should be sensitive to the reading of every line. The glib and ready actor will tend to follow the path of his own choosing, particularly if by so doing his own part increases in stature; he will accent the wrong word; will throw a dramatic value away; will, by some slight interpretive inflection, give to the line a meaning not contemplated or wanted by the director. He may even, *horribile dictu*, take some interpretive advantage that will tend to throw his part in slightly bold relief at the expense of one of his fellow actors. The willingness of one actor to take advantage of another has even left its mark on the language, for to "upstage" anyone derives from the

tendency one actor has to get the favorable upstage position above another during a scene. All for one—and that one myself! It is one of the functions of the director to see that no such unfair advantages are taken.

In passing on to an actor a correction of a faulty line reading, the director should be quick and ready with his reason for the correction. He should never be obscure in giving his reason for the change. If the reason is obvious, he should not be called upon to do more than indicate to the actor the change that is required and go on to the next correction. The average good actor usually needs only to have an error pointed out to him, but some actors are stupid and need to have the obvious crammed down their throats. Do not hesitate to do so if necessary. If an actor does something to a line or a scene or a situation that is out of key with the director's sense of the way the line should be read or the way the scene or situation should be played, he should give such reasons for the change that the actor is convinced that the change will be for the better. There may be honest disagreement. The actor may rationally have excellent reasons for doing as he did, and they should be given every respect. The director must be prepared, however, to defend his viewpoint in the matter. If there is time, he should clarify the situation to the very best of his ability. Sheer dogmatism on the part of a director can be harmful to production and should be avoided. If the director feels that he has done everything possible to recommend the change to the intelligence of the actor and fails and if he feels that the persistence by the actor in the way that he has taken will do violence either to his own directorial sense of the way the drama should proceed or to the interpretations of the other actors, he must then insist dogmatically upon the way he wants the part done. Most actors will graciously yield to the director in such instances. Having been engaged to do a certain job for a definite fee, they feel that it is the employer's right to get the job done the way he wants it done.

Finally, the greater facility with words that a director can bring to rehearsal to describe what he wants the more chance there is of getting from actors what he wants from them. An extensive collection of adjectives cannot help but prove of incalculable benefit to him.

THE AIR SHOW

Nothing remains but to go on the air with the broadcast. From this point on the preparation is as complete as it will ever be. From the moment the dramatic show takes the air, there are many things to be done. Adjustments of various sorts may be made, but there is little or nothing that can be done to alter the fixed characterizations of the actors.

The first experience of a director in putting a dramatic show on the air, whether it is one of slight stature or one filled with the most complicated and ear-splitting production, has elements of nightmarish excitement. A minor terror is engendered by the thought that, for better or worse, what goes out over the air is going to become part of the day's experience of millions of people and that the director's handiwork is about to come to immediate judgment in the minds of many men. And just as he feels a small terror, so should the director feel a large humility in the face of his job, an assurance that he has done everything humanly possible within the limits of his abilities, his material, and the people he has to work with to send out over the air a first-rate, honest, workmanlike job.

When the broadcast is about to take the air, first make sure that there is silence in the studio and complete attention from everyone while the starting cue is waited. The first cue may be given by the director, or it may be given by the engineer at the control console. There may be excellent reasons why the engineer should give the cue to start the show. He may be listening on earphones to Master Control to give him a verbal go-ahead. On the go-ahead, the engineer may have several jacks or pairs of jacks to throw down, and if a cue is mistakenly thrown before the engineer has completed his operations the show will have a muddy, confused opening. It makes for smoother production to wait a second or two and start the show properly than to have something wrong the very first instant it is on the air. Let there be no ambiguity in the mind of the one who gets the cue to start in the studio. Make sure that he knows which person in the control room will give the cue.

While the show is on the air the director's duties on the dramatic broadcast are as follows:

1. He gives all the cues indicated in his script.

2. He follows his timings and sees to it that the show fills the required timing. No more or less. He speeds up the show; he slows it down. He checks his own timings against those of the production man.

3. He makes cuts in the running of the show while it is on the air if such cuts are necessary to fill the required time.

4. He alone decides to make the cut, and he alone decides what that cut shall be.

5. He signals to the cast or to such aides as he may have on the floor for all minor adjustments to the performance.

6. If necessary he leaves the control room to make adjustments to the physical setup in the studio or in the running of the show.

7. Equally important with all these, he controls the pace of the show by quickening or slowing down scenes.

8. He makes every change in the physical setup and running of his show demanded by Master Control. He makes every change demanded by Master Control, involving traffic operations.

9. He alters the show in any way demanded of him by the responsible head of the production department.

10. He conducts the show.

He conducts the show. That brings up visions of waving batons; images of (flagrantly capillary) directors shaking their curls in Mélisandian ecstasies. It has never been demonstrated that the excellence of a broadcast bears any ratio to the length, location, color, quality, or movement of a director's hair. In consequence, conducting the show does not mean that the director must put on more show in the control room than comes out of the loud-speaker. Conducting a show means throwing clear-cut, unmistakable cues to actors and sound technicians. It means indicating to the orchestra leader such crescendos and diminuendos as are needed, indicating them with whatever movements of the arms may be necessary, broad, clear-cut gestures that are effective and help enormously in carrying a show through from beginning to end with sweep and rhythm; but conducting a show does not mean that the control room should become an arena for a director's exhibition of extrovertism. Composure of mien can be very reassuring to everyone on the floor of a studio! If minor mistakes are made, more than that, if great, big, whopping mistakes are made, it is inconceivable that agonized looks from the director can remedy the situation. There is a heart-

sickening finality about mistakes that are made during the course of a broadcast. Actors, announcers, singers are only human vessels, and directors should remember this. No one willingly lets a show down. When a mistake is made, if it is a mechanical error and may happen again, steps should be taken quickly to prevent recurrence. If it is not mechanical, if it is human, if it is in the popular phrase "just one of those things," no amount of glaring at the offender, no frenzied shrieks, cursings, protruding blood vessels, or fists pounded on the control-room window will erase a single word of it. Such didos invariably so confuse the malefactor that he will look helplessly to the control room and, knowing that the strange goings on have to do in some uncomplimentary way with himself, will promptly proceed to make another mistake, and usually the second one is a more serious one than the first. Worse than that—mistakes being contagious—a jittery cast is liable to break out in a rash of mistakes. And incidentally, while a distracted director is building up his blood pressure, there is every good chance that he will fail to carry out *his* part of the show. In his excitement and frenzy over what is finished and done with, he can forget to follow his own script properly, can throw the incorrect cue, and can so completely divorce himself from the realities of the situation that he may time his show badly and run over or under his time limit or make any of a dozen mistakes that will do the show no good.

During the course of the broadcast there should be constant quiet checking between the engineer and the director. In most studio setups only the engineer is looking at a volume indicator that enables him to tell whether the actor is giving enough voice, whether the orchestra is soft or loud enough behind a dramatic scene, or whether a high enough volume of sound is coming from the sound effects. Since the director's ear is usually his sole guide, he should check frequently with the engineer so that constant adjustments of volume may be made. If an actor is speaking too softly, a quick signal lets him know that he must speak up. If he is a shade too loud, he may be tempered. If two people are talking at the same time on different mikes, the level of volume determined at rehearsal should be maintained, and, if it is not, a quick check with the engineer will let the director know, and steps can be taken to correct this fault. Team-



A demonstration before the National Education Association Convention in New York City showing how educational broadcasts may be utilized in the classroom.

work with the engineer invariably results in better broadcasts. Since the engineer's script is cued in the same way as the director's, an excellent way to make sure that everybody is going the same place is to check in advance as he goes along. If, for instance, at the bottom of a page an auto crash has been cued in, a quick mention of it can do no harm. The director says, "Crash coming." The engineer says, "Check," or "Right," and there is a feeling of teamwork about the job that makes for smooth production. Particularly if the engineer's attention has been partly distracted by a telephone call is it imperative that there be such exchange of cue reminders. And all such exchanges should be done in a spirit of cooperation and not from condescending attitude that would suggest that the engineer cannot follow his own script and that the director is following it for him.

The director should always be aware at least of the engineer's problems. He should know what the mechanical limitations of the medium are so that he will not ask for the impossible or be disappointed if he does not get it. For example, the director should know that if a large orchestra is playing *mezzo forte* in the studio and the music is supposed to drop down behind an announcer who is speaking from another mike, that seemingly simple bit of mechanics needs a smooth fade on the orchestra mike, and not until it is down low enough should the announcer be cued in. The director must hold back that cue a sufficient length of time to give the engineer opportunity to drop the volume gradually. It may be 2 or 3 or 4 seconds before the level of sound on the orchestra mike can be controlled. If the director does not give him a few seconds to do his work, he has to flip the announcer's mike open so that he will catch the first word of the announcement; in that case, music will spill over onto the announcer's mike, and the result is a poor balance of music and words. Remember, then, if the engineer has complicated mechanical operations to perform at any given moment in the script, not to push the show ahead of him. Do not throw cues so fast that mechanically the medium cannot keep up with you.

While a show is on the air the director should be strict about general studio noise. The notion that there should be quiet in the studio is a generally accepted one, and people do keep quiet in studios during a broadcast. However, slight movements from

humanity in a crowded studio are natural and to be expected. Most sounds from such movements are not picked up on the mike, or, if they are, they are so slight that they do not get out over the air. The director should take care that studio noises are kept down to a minimum. Probably the best way to do this is to equip himself with an assortment of nasty, mean, beetle-browed facial expressions. A director should acquire a virtuosity in throwing dirty looks at actors, guests, musicians, at anyone who offends with unnecessary noise in the studio. Such a minor but effective talent should not be despised. If—heaven forbid!—naughty or blasphemous words should leap unbidden to the director's lips, let him have a care and seal the offending members tightly, particularly if there is an audience in the studio. Let him not feel that the sound-enclosed glass studio is sufficient protection. The practice of lip reading is no longer a recondite art known only to deaf mutes and Philo Vance.

There is a particularly vicious manifestation that should be squelched instantly by a director. That is the practice known professionally as "clowning." "Cutting up" is what the man in the street would call it. It can come from almost any group in the studio. There is never any excuse for the actor to indulge in the practice in a dramatic show. There is a place for it on a slam-bang comedy show, but even then there should never be any clowning that would kill prearranged rehearsal comedy. If the rehearsed comedy has already died a natural death, there is not only a need for clowning but a positive injunction that there should be some. But on the dramatic broadcast, there are so many finely adjusted balances, cues, directions, values to be brought out, sound patterns or rhythms to be completed that any clowning from a member of the cast should be reason enough to cease engaging such an actor—or at least he should be warned that he will not be engaged if the offense is repeated.

Professional musicians are at once a blessing and a curse. In general they are fine fellows, and the best of them have great gifts that have been won through driving, hard work. But while winning through to those gifts they have usually had little time to develop an appreciation of the more subtle nuances of drama. Melpomene has little truck with the bull fiddle. So when the boys go from one studio to another, dashing off Handel's *Wassermusik* in one studio, rushing to a second for a

bit of Sir Edward Elgar, scratching out a chunk of César Cui in another, losing a few dollars at pinochle at the stand-by in studio 6, along about 9:30 at night when they come to your show, which happens to be a bit of gossamer out of Barrie, you cannot blame them if they are just a little bit bored by it all. Some of the younger boys in the band begin to get somewhat out of hand, and the first thing the director knows a bit of comic pantomime is likely to start in one corner of the studio. Let him then squeelch it hard and fast, and let there be no mistake about it. The musical director should be the one to stop it, but, being too engrossed in his own meditations or following the script, he often does not see what is going on.

It is not conceivable that a production can be produced twice in exactly the same way, especially a complicated broadcast in which many tricks of production, the use of fades and musical effects, involved sound patterns and delicate balances of perspective are all woven into and around the warm human expression called acting. There are slight changes of inflection, accents that were not present in exactly the same place on the dress rehearsal, shadings and intonations that give slightly changed values to lines, and—probably more important than all these—variations of pace make their appearance on the broadcast. All such slight modifications in turn leave their imprint on the shadings of everybody present in the *mise en scène*. Frequently because of them quick adjustments must be made in ensuing scenes, and the director should be ready to make them. He is permitted a slight measure of improvisation, and by quickly passing a signal on to the proper persons a production change may be brought about either in the performance of an actor, a sound pattern, or a musical situation. For example, at a certain spot in the broadcast the orchestra is expected to come in fortissimo exactly on cue. Suddenly, because the accents of a scene have undergone a slight change, the director senses that not only is a heavy orchestral attack not needed, it would even violate the aesthetic demands of the scene. He should then signal the orchestra leader to play the cue *mezzo forte* or even piano and inform the engineer to be ready to ride gain on the cue in its changed form rather than in the form that he had marked on his script.

In this manner a director makes minor adjustments all along the way as they are needed, adjustments that are slight, that cannot wreak havoc with the cast, because they will not be too far removed from what had been set before the broadcast. He should stand in the control room and indicate to everyone concerned—the orchestra leader, the engineer, and the cast—just how sweepingly he wants a crescendo, how long he wants the orchestra to take to complete a diminuendo, how fast he wants the horses to go, or how long and how vigorous he wants the hand-to-hand encounter. From time to time directors should brush up on their pantomime, and wherever it may help to convey a clear and accurate picture of what they want and how long they want it to take they should not be hesitant about using it.

Attention to even so simple a detail as the proper manner of following the pages of a script can be a large-sized piece of bread cast upon the waters of good production. As a page is turned face down, the next three pages of the script should be plainly visible face up. In other words, of these three pages one will be the page you are now passing through, and the next two will be the following pages. Why should this be of help? Because with these two pages face up before you, it is possible to keep an eye out for the troubles ahead. If the page you are on is a simple one with no cues or with one or two very simple ones, you can be mentally setting yourself for or reviewing the routine of the cues you are approaching. If you feel that keeping an eye out for what is coming a couple of pages away is asking a little too much, it surely cannot be said that having at least the next page open before you is a burden. This much at least is essential—you should be ready for whatever is at the top of the next page, whether it is a direction to throw a cue to an actor, a sound technician, the engineer, or the orchestra leader. The slight fraction of time it takes to turn over a page and take a look at what is written there can be the split second of delay that will make the difference between a slipshod production and an alert, clean-cut, accurate job.

This trick of keeping a weather eye out for what is coming also is convenient from another angle. As you glance over the next page you cannot help but notice whose part is coming up. If you see that along about the middle of the next page, possibly

25 or 30 seconds away, our young hero is due to come on mike, say a few important words, and disappear, it is sometimes helpful to take a quick glance about the studio to see what our young friend is doing. If he is a smart, wide-awake young actor, he is probably a short distance from the mike, straining at the leash to get up there and get it off his chest. But he may, on the other hand, be so blasé that he has momentarily forgotten why he is in the studio at all. He may be daydreaming; he may be looking cowlike into some young thing's eyes; he may be gazing at the oboe player sipping on his instrument and, with some justice, be wondering why. In a word, he may be completely remote from the matter at hand. Such a situation needs action from you, and then you signal to another member of the cast, a musician, or anyone who is near him to prod the dreamer out of his reverie, and that quickly!

CHAPTER 9

TYPES OF PRODUCTION—I

1. REMOTE BROADCASTS

Every day, radio engineers encounter new problems in bringing to the listener broadcasts from strange, out-of-the-way points of origination. It seems as though nothing can discourage these men, for time and again they have made complicated adjustments and surmounted tremendous odds in putting shows on the air. Usually all they need is telephone wire, but, lacking this, they will set up a miniature broadcasting station and send out the program by short wave to be picked up and retransmitted from the station. In times of flood and fire and disaster of almost every known variety, radio engineers have managed to make possible breath-taking broadcasts, often under the most discouraging conditions. The story of how to produce that type of remote broadcast falls within the province of one of their own number, but the tale can be told here of the production of the more routine remote broadcast from one side of the town to another, from a convention hall to the station to the network, or from the organ loft to the station to the network, and such a broadcast is one that, without benefit of fire and flood, can create its own disaster and produce its own gray hair.

The broadcast containing units that originate from several different sources is a commonplace of radio production. How many times in the course of a half hour have we not heard radio take us from one to a half dozen places? Listeners to the American School of the Air are familiar with the famous trumpet call from Beethoven's *Leonore Overture*, No. 3. It lasts only 12 seconds, is the signature of the program, and almost invariably comes from a different studio from the one originating the rest of the broadcast. Occasionally the trumpeter does come to the originating studio, but usually he is picked up from a studio where he is rehearsing with an orchestra, preparing to go on the air at a later hour. This trumpet call or signature is, in such

cases, a remote portion of the broadcast. An American School of the Air program may start with the trumpet picked up from a remote source, proceed from the station studio for 1 minute,



The many production problems met with in presenting the Metropolitan Opera Company in its own setting remote from the studio have been superbly overcome by N.B.C.'s technicians.

skip to Switzerland, return to the New York studio for 30 seconds, skip to Japan, and return to finish in Seattle or back in New York.

The secret of producing successfully such a complicated broadcast lies in complete, flawless preparation before the broadcast of all the units or elements that go to make up the program. It should be remembered that the large networks maintain abroad a staff that is remarkably expert in their awareness of what is going on in the world and even of what is likely to go on in any place and at any time. The members of this staff, in conjunction with the home office, lay out programs, and arrangements are made with European broadcasting stations and with service companies such as the American Telegraph and Telephone Company or the Radio Corporation of America to relay them to the United States. It is essential that both the staff abroad and the staff in this country be aware of all the details of the program—the date, the hour, the exact length of time of the portion that will be remote, the cue words on which the switch is made from here to there or from there to here, the approximate minute and second at which a switch will occur, and any additional information surrounding any particular broadcast. If the director is familiar with all the conditions laid out in advance for the remote broadcast, the chance of an embarrassing

EXAMPLE OF REMOTE CONTROL SHEET
DEPARTMENT OF PUBLIC AFFAIRS

December 2, 1938.

SHEET No. 11162.

REMOTE

DATE: Tuesday, December 12, 1938.

EVENT: PRIME MINISTER NEVILLE CHAMBERLAIN, speaking before the annual dinner of the Foreign Press Association.

TIME: 4:40–5:50 P.M. CNYT.

LOCATION: BBC, London.

ANNOUNCER: BBC staff.

CONTACTS: Miss Sioussat, CBS, NYC.

TRAFFIC AND RCAC to pick up BBC Empire station on Schedule C basis and

TECHNICAL: deliver to 485 Madison Ave., New York.

PROGRAM INFORMATION: 4:40:00—Opening announcement from New York.

4:40:30*—Master control to fade in BBC Empire station on cue: "We take you now to London, England"

5:19:00—Master control to fade out BBC Empire Station at conclusion Chamberlain's address.

Closing announcement and sign-off from New York.

* Approx.

occurrence is minimized greatly. When all the arrangements for a remote pickup, either domestic or from abroad, are made, the network department charged with making such arrangements sends to all concerned with its production a final Remote Control Sheet that contains all the pertinent details necessary to complete coordination. This sheet is present in the control room of origination and is followed by the director and the engineer.

The director should provide for a stand-by program to fill, in case the remote portion from abroad does not come through or comes through badly. The stand-by may consist of an organist, a pianist, an orchestra, a quartette, or any light flexible program that can fill if necessary. A stand-by program must be rehearsed so that in case there is need to fill it will be up to the station or network standard. The director should make sure at the beginning of rehearsal that everyone concerned knows exactly what routine has been laid out. The engineer should check with master control and master control should check with the service company furnishing the short-wave facilities. All cues should be checked so that all switches are thrown at the reading of the right word, and no cues should be changed unless everyone along the line is informed of the changes. Every effort should be made to produce the show in such a way that the timings laid out are observed to the split second. Studio tests and balances of voice and orchestra should be made before the broadcast, even though a very small part of the show may originate on this side. All should be in readiness to fill in with a well-balanced, well-produced show in case of failure of the pickup. Studio discipline should not be permitted to relax during the period when the remote broadcast is on the air. Often there is an impulse on the part of studio personnel to take it easy and even indulge in a bit of mild horseplay, once a satisfactory pickup has been made, but this careless conduct should be corrected at once by the director. You who are entrusted with the production of such a broadcast can never tell when it may be necessary to fill in with the stand-by program, and if the stand-by is scattered all over the studio, it may not be pulled together quickly enough when needed. The director should never relax and become too much the listener being entertained by the remote portion of the broadcast rather than the head responsible for the smooth run-



Parents of a survivor of the torpedoed steamship Athenia hear description of her rescue—over N.B.C.

ning of the whole show who at any moment may be called upon to exercise judgment in a production crisis. Nor should he become so hardened to routine, so blasé in accepting the wonder of modern science that he can listen with divided attention or slight concern to a broadcast from a far corner of the globe.

In spite of the increased efficiency of technical and general program operations, emergency situations will arise from time to time, and it is the director's responsibility to deal with them calmly and intelligently. He must carefully school himself in advance in the manner with which he will meet any contingency, and he should rehearse in advance the part he would play in the event that he is confronted with an emergency. By anticipating and preparing for them, they will be met most capably. Standard emergency announcements are memorized by announcers and producers should make sure that they know them and are ready to use them if necessary.

There are two types of failure of programs from remote points.

1. *Failure at the Beginning of the Program.* In the event that a program fails to start within 45 seconds of its scheduled time, the standard form of announcement may be, in effect, as follows:

"We regret that due to operating difficulties we are unable to present immediately the program of _____. In the meantime, we offer _____ etc."

Then fill with stand-by. Upon being notified that transmission is clear for the scheduled program, fade out the stand-by program and announce:

"The operating difficulties which necessitated delay in presenting the program of _____ have now been cleared and we take you now to _____ (Point of origin)."

2. *Failure after the Start of the Program.* In the event of line failure of more than 45 seconds after a program has taken air, the following announcement may be made:

"Due to operating difficulties there has been an interruption in the program of _____. We hope to be able to resume this program in a moment or two. In the meantime we present an interlude of _____."

Before permitting the resumption of the program, the stand-by music should be stopped, and a further announcement should be made, substantially as follows:

"The operating difficulties which necessitated our interrupting the program of _____ have now been cleared and we return you to _____ (Point of origin)."

At the conclusion of this announcement *and not before*, on cue from the producer to the engineer in the control room, the remote program should be fed to the stations.

On international short-wave programs when service is interrupted for longer than, say, 45 seconds, and master control advises that the program is not coming through, an announcement substantially as follows may be employed:

We regret that atmospheric conditions (or difficulties in short-wave transmission) have so far prevented our bringing you the program of _____. However, we anticipate that these difficulties will be overcome and that shortly we shall be able to present this special feature."

Then fill in with stand-by program until you are able to resume the international program, at which time the stand-by music is to be faded out and an announcement reintroducing the short-wave broadcast given. If, however, the program fails to come through at all within its allotted period, then common sense dictates the making of a special closing announcement at the end of the stand-by fill-in, expressing regret over the inability to present the program in question (which must be identified by name) and indicating the reason, as suggested above, for such failure.

It will sometimes be necessary to rewrite the closing announcements on short-wave international broadcasts inasmuch as there may be unforeseen variations in the program at its foreign originating point. For this reason the producer and announcer should listen carefully so that the closing announcement will be an accurate summary of what actually went over the air during the short-wave period.

There are occasions when the transmission of overseas programs is so imperfect as to prevent complete understanding on the part of the audience but not so imperfect as to require a



Paul White, Columbia's Director of Special Events, contacts Europe by phone and puts Bob Trout and Elmer Davis on the air during the crisis of the fateful Sept. 3, 1939.

cut. On such occasions, the announcer may interrupt the program with explanatory announcements, though the decision to make such interruptions should probably come from a responsible head or the production manager.

If an international short-wave pickup indicates that it will run over its allotted time and if there is no special policy to the contrary or if the broadcast is not filled with great political significance, where to discontinue it would bring about audience displeasure, the foreign pickup should be faded out, and the announcer should bring the program to a close. On the other hand, if the foreign pickup finishes *earlier* than its allotted time, there is always the stand-by program to fill until closing time is reached.

Remote foreign broadcasts have become increasingly better until today reception is remarkably clear and free from atmospheric and transmission difficulties. The success of this type of broadcast is effectively demonstrated daily by graphic "on the spot" broadcasts from the many European areas of conflict in the present World War. One foreign pickup after another is being brought to America with amazing fidelity, brilliance, and timeliness by the National Broadcasting Company, Mutual, and Columbia.

OTHER REMOTE PICKUPS

Domestic. It must be repeated that accuracy of preparation makes for the success not only of international short-wave but of domestic remote pickups as well. Arrangement for accurate cuing, for a stand-by program to fill in case of failure, a setup and balance of the stand-by orchestra, and a clear understanding on the part of all concerned in the routine of the broadcast are essential to the successful production of this type of show.

It is not necessary to use as a cue the name of the city to which the switch is made.

Stories of Industry, presented by the United States Department of Commerce in cooperation with the Columbia Network, was a program designed to acquaint the public with the background and accomplishments of our great American industries. The broadcast originated in Washington, D. C., a basic station in the network. There a speaker would narrate at length, and twice during each broadcast the program would switch to New York,

where a short illustrative dramatic scene would be interpolated. At the conclusion of the dramatization, the program would switch back to Washington, and except for slight acoustical differences apparent only to the trained ear of the expert radio producer, the listener would be unaware that a switch had been made. Instead of the usual "*We take you now to New York*" type of cue, the cues were written as follows:

At midnight the throng of guests had left the ballroom and had *repaired to the refreshment hall*. (cue)

(SWITCH TO NEW YORK.)

SOUND: *Hum of voices, punctuated with occasional laughter.*

FEMALE VOICE: What a brilliant affair this is, and how beautiful Mrs. Madison is tonight!"

The dramatization would continue until the final line:

DOLLY MADISON: The name which *I think fits it best is . . . ICE CREAM*. (cue)

(SWITCH TO WASHINGTON)

The switch is made, of course, instantaneously at the completion of the last word—in the first instance, the word "hall" and in the second, the word "cream."

In making instantaneous switch-overs, remember that they should not be made on music strains or on sound effects of a continuous nature. The closing of a door could be taken as a cue to switch, but when a switch is made on a word that is backed by a flowing effect, such as the sound of wind or of rushing water, the listener will get the illusion of a sharp instantaneous cutoff, incomplete and unpleasant. If the dramatic needs of the scene demand such an effect, the director should taper the sound to as low a level as possible, in other words, "sneak" it down and as near out as he can in the hope that for a few seconds before the switch-over its absence will not be noticed. Cutting a musical strain sharply to effect a switch-over would be extremely unpleasant to hear and should be always avoided. Let the orchestra come to a cadence, or fade it out before making the switch.

In building programs where one or more switch-overs occur, if possible set the switch-overs to occur in the early or middle part



Portable pack transmitter shown above during broadcast of quail hunt in uplands of New Jersey is the type used for many remote stunts and news broadcasts. Its signal can be heard four to six miles. It is picked up at a temporary receiving point and relayed to network via land lines. Above photograph shows Babe Ruth raising his gun at the left while announcer Dave Driscoll of Mutual Special Features Division raises his gun at the right, shooting and describing scene at the same time by means of microphone strapped to his chest. (*Courtesy of WOR, Mutual.*)

of the show in order to facilitate getting off the air gracefully, on time, without undue production rush.

Before remote pickups, members of the station field-engineering staff make a preliminary survey of the place of origination. They test the acoustic qualities of the room or hall, make whatever adjustments are called for, and prepare the place for the scheduled broadcast.

A very careful routine is usually followed for the pickup of dance bands from hotels and ballrooms or clubs. The field engineers examine the acoustic situation very thoroughly before such broadcasts go on the air. Since dance bands are usually arranged to stay on the air as a series, in view of their comparative permanence they are given a soundly prepared production. The most favorable positions are picked out for microphone placement, and a test balance is piped by wire to the station where experts listen to the orchestra. The instrumentation of the band is known to them, and they make suggestions and corrections by telephone to the production man arranging the whole test setup. When the most favorable setup has been worked out, it becomes permanent and standard for that particular remote dance pickup, and the orchestra leader abides by it on all future broadcasts in the series.

Thereafter the production for such shows is ordinarily in the hands of the announcer, though this situation may differ according to the practice of individual stations and networks. An announcer or production man entrusted with putting on remote dance-band programs should at all times maintain a thoroughly professional attitude. He should not bring guests or sit at tables with parties; in general, he should maintain a friendly but dignified attitude befitting his position as a representative of his broadcasting organization. Before each broadcast these band pickups are tested by the engineer through master control, which checks levels and balances in the same way in which levels, balances, and equipment are checked before any studio broadcast. The announcer's watch should be set to conform to station timing at least 5 minutes before air.

Program routines with the list of numbers to be played should be carried to each broadcast. Designations of originating restaurants and hotels as well as special instructions regarding them are usually given on the continuity sheets provided in the

book of the day for announcers. Usually orchestras have standard identifying themes, and the opening announcements are also standard, to the effect that we are listening to "John Doe and his orchestra, playing at the Hotel So-and-so, New York." The name and general location of the originating point must be given twice in 15-minute programs and three times in half-hour programs, as follows:

15-MINUTE PERIODS

At opening of program
At close of program

HALF-HOUR PERIODS

At opening of program
Midway in program
At close of program

Names of vocalists should be given sparingly during remote dance-orchestra programs; it is enough to identify the vocalist once in each 15-minute period.

There should be no more than seven credits for the orchestra leader on one half-hour program, inclusive of opening, middle, and closing announcements.

On 15-minute dance programs, in addition to the standard identification at the opening and close, two additional credits are to be given.

Announcements of individual numbers or groups of numbers should be as concise as possible. It is tiresome to listen to long and extended ad lib descriptions of the selections to be played or of the setting. No attempts should be made to be facetious, to pun, or to make humorous remarks about song titles, the situations inherent in the songs, or about the hotel or hall from which the broadcast is originating. Do not permit negative announcements to creep into the broadcast by introducing the concluding number with such phrases as

"Finally the orchestra presents _____
In conclusion _____
Closing the program _____"

Such practices should always be avoided since they condition the listener to shutting off his radio and this can be justifiably annoying to an advertiser who is paying for a following program and hoping for a large potential listening audience.

DRAMATIC PRODUCTION ON REMOTE EQUIPMENT

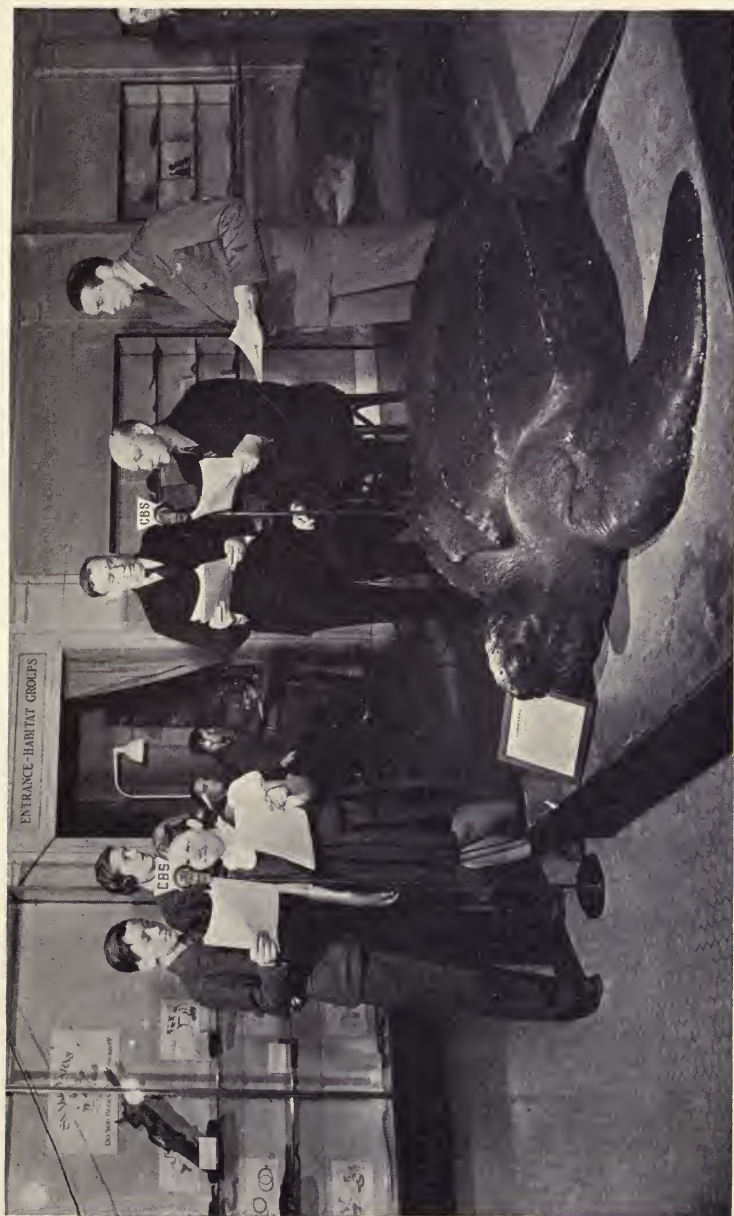
Almost all dramatic works are produced in the station studios under conditions that are theoretically ideal. The studios are

acoustically treated; there are a live and a dead end. There are convenient drapes and screens and carpets and a host of conveniences intended for use in creating the best acoustic framework that modern engineering science can provide. Occasionally, however, it falls to the lot of the director to produce a dramatic broadcast remote from the studio, usually before an audience, in a hall, a room, or on a stage that was built long before radio was thought of. It would be presumptuous to lay down a set of production rules and assert dogmatically that they will cover all possible broadcasts that fall under this category, since each remote dramatic broadcast must necessarily be treated individually, with full regard for the echoes, dead spots, and special acoustical horrors lurking in such places, ready to leap out and confound the director. It sometimes happens that the origination point is ideally and accidentally suited for broadcasting, but such instances are unusual.

Remote broadcasting equipment is usually geared to the use of three microphones, one for sound effects, one for cast, and one for orchestra. Any fancy production calling for more microphones should be abjured. In advance of rehearsal, if the field engineering staff has not covered the spot and improved the acoustic setup, the director and the engineer should bring into play whatever ingenuity they may jointly possess and try to make the place as fit for broadcasting as possible. If the location is very live, that is, if it is characterized by a high degree of reverberation, a few carpets can help to kill some of that quality. If the location is a stage, blessed with a backdrop or side curtains, let them down, for they will help to create a dead area similar to the setup found in a studio. Utilize everything that will help kill echoes, or if the place is too dead (with no live surfaces affording brilliance) curtains, draperies, or rugs that bring about that condition should be wholly or partly removed.

Uni-directional microphones are helpful in these trying situations, because they have a high degree of selectivity and can be directed to pick out wanted sounds emanating from one direction and to exclude unwanted sounds from another, thus enabling the director to concentrate on one acoustic area.

It is advisable to limit the production to as few sounds as possible for the reason that sound effects are best when they are produced under ideal conditions, where they can be subtly



Columbia American School of the Air presents Roy Chapman Andrews, Director, American Museum of Natural History. The broadcast originates each week from a different hall in the museum. George Allen (right) directs the program.

accented, miked sharply, and where they are subject to precise and rigid acoustic discipline. If many sound effects are devised it will be found that a great amount of rehearsal time will be consumed in trying to bring to perfection the levels and balances of sounds against orchestra and cast under unfavorable acoustic circumstances. Insist that unnecessary walking about during the broadcast be kept down, particularly if the floor or stage is hollow sounding.

For this type of broadcast, a portable control booth containing a loud-speaker for use as a monitor is often provided. This is of great advantage in checking perspectives and levels and balances; without it, such checking will have to be done with earphones. If it is possible, the production man who has been working with you and who is familiar with the effects you have been trying to create, can be sent to the station to listen to the dress rehearsal if it is fed back to master control. Knowing your purposes he can be a very helpful listener and pass back to you corrections based upon his better monitoring facilities. Check your watch with master control, in order to be in step with studio clocks, at 5 and at 2 minutes before air time. At the end of the 2 minutes stop it quickly and instantly start it over again from zero; at the same time cue the start of your show. From this point on simply go by your stop watch and finish the broadcast in 14 minutes 30 seconds, 29 minutes 30 seconds, or whatever the length of the show may be. Make sure that everybody appearing on the show is ready and standing by when it takes air. Warn everybody to keep as quiet as possible. During all dramatic broadcasts, general studio noise should be kept to a minimum, but on remote spots faulty acoustic conditions may accent ordinary sounds that might not even be picked up in a studio.

If the broadcast is in a hall or auditorium where a public-address system is being used to carry the broadcast to the invited audience, make sure that the loud-speakers are so placed that there will be no feedback of sound into the microphones that you are using on your broadcast. Test the pickup of the public-address system before the air show. If it is possible, place someone, a page or policeman, to guard the exits and entrances, to keep out any noisy wanderer who may come bursting in on your show, unaware that there is a broadcast on the air. Such unexpected guests can do your broadcast no possible good. If the

broadcast is on a floor where the audience may have access to equipment, make sure that no one tampers with it. Cooperate in this respect with the engineer, whose job it is to watch his equipment.

A dramatic broadcast produced under circumstances such as have been pointed out can be a sore trial and may be a complete "clambake," a disjointed, uncertain, badly produced show, and because the cards are somewhat stacked against it, it can easily be a poor show. There is, however, no reason for believing that it must be. It can be a challenge to your ingenuity to make it a superlative broadcast. If you have your wits with you and are ingenious enough to create conditions closely approximating studio conditions, if you check and double check every factor of production, if you leave nothing to chance and foresee possible complications and guard against them before they have a chance to happen, there is every reason to believe that you can emerge triumphantly from the uninviting task of producing drama by remote control.

USE OF MULTIPLE STUDIOS

Whenever an echo chamber is used on a broadcast, in a small way the production is taking place under the condition of multiple-studio technique after the manner of production employed in London at the British Broadcasting Corporation. Under the English system of production, the director sits at a panel that is hooked up to several studios. There are one for the orchestra, one for sound effects, two for cast, and one for the crowd. The director controls the relationship by the use of lights among all the elements of productions. Some directors employ an assistant who works the knobs controlling the input from each of the studios, or the director may control them himself. For cast effects, he may use a live studio or a dead studio. There is also an engineer who regulates the over-all level of sound—in other words, "rides gain," in our acceptance of the term. Observers of the English system assert that it has its advantages and disadvantages. On the credit side, excellent and subtle cross-fading effects are achieved. It has a disadvantage in the lack of personal contact, with the resultant increase of mechanical failure. It should be pointed out that the rehearsal time of the English dramatic broadcast for the half-hour show usually stretches over a

period of 4 days—three hours in rehearsal each day, with, of course, time out for tea.

The use of more than one studio in radio production is not confined exclusively to European methods. There are times when we, too, can use several studios to our own advantage. Under what conditions would a dual or multiple setup be advantageous? The answer would necessarily have to be determined by the needs of each individual situation. A director should always bear in mind that production does not necessarily have to be confined to one studio. If a show is physically cramped in one studio, cramped to a point where proper levels and balances cannot be perfectly brought about, it is time to start thinking of ways and means of bettering the conditions. Using two studios is one of the answers. Obviously a second studio should be available, and there must be sufficient personnel to work the multiple setup, an additional engineer for the second studio, and preferably an assistant or second production man who can serve as liaison man between both of them. A telephone line should be kept open between the two control rooms of the studio in use.

Let us imagine a simple situation in which the use of more than one studio is indicated. The production is assigned to a moderate-sized studio, although a very large studio should be used. Such a studio, however, is not available. There is a sound effect setup requiring a large amount of space for free and easy working and acoustic conditions. There is a large-sized cast, say, twelve people and a half dozen extras. There may be a chorus of eight or sixteen voices. A large area of studio is needed for a complicated mike setup, and, in addition, there will, on schedule, come into the studio an orchestra of twenty-eight men and a conductor. Some invited guests may also drop in for the air show. The broadcast can be produced with all these people in the assigned studio, and it may come through very well, but the decision to use a second studio will probably be a wise one. *First, the feeling of being cramped will be removed.* Direction is bound to flow along more smoothly, because it is generally true that the larger the group of people that have to be moved about the more the director will be slowed down. Sometimes from 5 to 10 minutes are lost merely in waiting for a large orchestra to leave a studio for a smoke. The boys mean to move quickly, but

musicians seem congenitally geared to *lento* body movements. They will, of course, move in and out just as slowly when they are removed to another studio away from your sight, but it is of some remote psychological assistance to the director to be saved from watching a leviathan group seemingly moving out of the room but getting no place rapidly. There is always the danger when the show is on the air that the sound of a large orchestra will spill over onto the cast mike in spite of all the engineer's efforts to control it. If the music from the orchestra gets too heavy and spills over, he must lower the volume on his cast mike, and to do that will work havoc with the actors' voices. Putting up gobos or sound screens, partially setting off the orchestra from the rest of the studio—in effect making a studio within a studio—will help, but there may still be too much spillover of music. However, if the orchestra is placed in a separate studio, the whole situation of balance between the units of cast, sound, and orchestra can be perfectly controlled. The music is fed to the control console of the engineer working in the first studio, and he can feed the exact amount of volume necessary to preserve a perfect working balance between the several production elements.

An important point, and one that should not be overlooked in such productions, is that the orchestra conductor should always be equipped with earphones so that he may hear the broadcast. Thus he may follow the script before him and listen to the show as it is being played, taking his cues as they are written, not as they are thrown to him from a control room, since the studio in which he is working is not the first studio of origination. As a matter of fact, it is wise practice in all large-scale dramatic production, whether multiple or single studio, for the orchestra leader to work with earphones so that he will be sure to hear every cue. Some cues may be said so quietly that he cannot possibly hear them without earphones, or the actor may be facing away from the leader as he utters his cue, which, if it is a soft one, will be lost. Also, a cue may come in the midst of a great deal of loud noise and be as effectively lost as if it had been uttered in a whisper.

With a large number of people in one studio, the general studio noise increases. Much of it may emanate from the orchestra; consequently the use of a separate studio for the orchestra will reduce this hazard to a minimum. When the orchestra is not playing, the orchestra mike can be closed, eliminating completely

any studio noise that might come from a large orchestra waiting for or getting ready for the next cue.

Complicated or special sound effects may be set up in a separate studio and fed in with the show. Sound effects requiring a special acoustic treatment, difficult or impossible to balance with other production elements present, may be set apart in a separate studio and combined on cue with the rest of the program. Sound effects may be worked right in the echo chamber, which is, in effect, a separate studio. If a show requires two orchestras, a "hot" band and a symphonic orchestra, which acoustically cannot and may not be handled in the same studio, the use of an additional studio is indicated.

The success of the multiple-studio technique depends upon several factors: first, the perfect coordination of every single element of the production. Nothing can be left to chance for the reason that major adjustments are impossible once the show gets under way. In spite of the telephone connecting the several studios, there is little chance to improvise production in order to get out of a tight fix. Cues should be arranged with more than usual care. They must be precise almost to the syllable of the word. The orchestra leader must not be told to sneak in the orchestra somewhere on speech 218. He must be told the *exact word* on which he must start on speech 218, because when the engineer cracks open the mike in the originating studio to bring in the music from the remote studio, the orchestra must be playing the very instant he wants it. It is extremely embarrassing to expect a beautiful music cue to come in rich and full-bodied at a certain moment in the drama and to find when the mike is opened to receive it, nothing but painful silence.

A common everyday use of the multiple-studio technique occurs in the employment of large organs of the Wurlitzer type. They are set up in studios acoustically treated to take care of the heavy volumes of sound inherent in the instrument. When their use is indicated, the organ studio is patched in by wire, and the organ music is fed on cue to the studio of origination. The same care in setting up accurately all the details of cuing is as necessary for picking up and feeding remote organ music as for picking up a remote orchestra.

Interesting production possibilities lie in the use of more than one studio, and the field has been only elementarily explored

in American broadcast practice. In a broadcast codirected by Irving Reis and the writer, an adaptation of "The Tell-tale Heart," by Edgar Allan Poe, an effective and interesting use was made of two studios. In the remote studio, a professional blood donor—chosen because of his healthy, lusty heartbeat—lay stretched out on a couch, and his heartbeat was picked up by a supersensitive device that magnified the sound to enormous proportions. The sound was then piped into the originating studio, picked up from a loud-speaker by a microphone allowing still greater amplification of the original volume. This control of a tiny sound was really the protagonist of our drama, permitting us to increase the volume gradually until, at the climax of the drama, the studio was flooded with a heartbeat of orchestral and terrifying proportions.

REMOTE BROADCASTS FROM THEATRES

With the growth of the custom of inviting large audiences to witness broadcasts, stations and networks in many instances have been compelled to lease theatres and convert them into remote studios as points of origination for many of their more important broadcasts. In some instances, the theatre boxes are made over into control rooms, or the control room is erected on the stage. Acoustic conditions that were adequate for the needs of stage productions invariably have to be changed completely or radically adjusted to meet the different and exacting needs of broadcasting and radio production. For some musical productions, variety shows and shows built around comedians, the transfer from the studio to the theatre usually is beneficial, since these shows are of a type that is helped by the presence of the very large audiences a theatre will accommodate. The quality of musical production is excellent, for some of the finest orchestral broadcasts originate in theatres. In general, subtlety in dramatic production, however, will be more difficult to attain in theatres. In spite of drapes and hangings and sound-treated walls, the large auditorium usually presents a more heavily accented reverberatory quality than the studio. The feeling of closeness or intimacy is harder to come by because of the increased roominess. In the studio, the effect of gaining a sense of intimacy in drama is met by setting up sound-absorbent screens around the

mikes, but it is difficult to do this in the theatre without cutting off the view of the cast by the audience. Sound screens may be used, but they should be placed in such a way that they will not cut off the view and thus not offend the invited audience. Some of the reverberation will be taken up by the audience itself, each member of which represents a definite absorption factor. Consequently the larger the audience the greater the absorption and the more a director's efforts to create an atmosphere of intimacy will be helped. In the studio as well as in a theatre, the absorptive quality of each body present is always a factor to be aware of and count upon in reducing the amount of hollowness in tone that is likely to be present.

Some absorption can be created by letting down the proscenium curtain to the very limit prescribed by the sight lines, *i.e.*, that point beyond which the view of the stage by the guests in the balcony would be cut off. When the needs of the script call for the use of a filtered mike, it should be used with extreme care. If the public-address system is gained to too high a level in volume, carefully miked filtration effects can be lost. The public-address system may restore the very low frequencies that have been passed, and instead of the thin, attenuated voice of the typical filtered mike a full tone will be heard. The engineer handling the public-address system may anticipate the spot in the script where the filter is to be used and hold the gain down or, better still, wherever possible, the director should produce the filtered effects from the dead booth.

Effort should be made, in producing in a theatre, to adopt some of the more obvious conventions of the stage production. Guests of a radio broadcast given in a theatre are usually admitted as early as 45 minutes before the show goes on the air. It is good theatre management to make sure that the house curtain is let down before the public is admitted. It is distracting to actors and messy stage generalship to put on part of the show in advance of the real show while people are gawking at what is really the broadcast in a state of undress.

Announcers making curtain speeches before a broadcast must remember to keep such talks strictly in character with the type of program to be presented. Wisecracks, slang phrases, etc., should be scrupulously avoided. Invite the members of the audience to enjoy themselves, but do it in a direct, friendly manner.

Suggest to them that in showing approval of the show they do so by applause only.

Five minutes before curtain time, the stage electrician should flash the stage-border and dressing-room lights in rapid succession as a signal for all artists, musicians, and others concerned with the program to proceed to their places on the stage.

No visitors should be allowed backstage at a theatre while the broadcast is on the air. When the house curtain goes up a few minutes before air, it should present to the view of the audience a well-dressed, orderly-looking stage, with the orchestra and chorus in position, the whole company giving an appearance of alert readiness, with no mad rushing to and fro as if something catastrophic were about to happen.

A smooth presentation routinized with slick theatre generalship will be bound to reflect itself to the listening audience, which is, after all, the audience you are trying to reach. How much of the show should be directed at the guest audience? "Sight" gags, that is, comedy lines or business that must be seen, rather than heard, to evoke response should be abjured. Some comedians are extremely skillful in getting response to a sight gag and quickly converting it by timing and accent into a gag intended for the ear alone, but those who can do this are few and far between.

One evening in his N.B.C. Town Hall Tonight broadcast, Fred Allen, whose awareness of comedy values is not even closely approximated by most of the comedians of this generation, gave a striking demonstration of the methods used by inferior radio comics to "pump" response to gags by using sight "business." He read some dull, un-funny material that brought no response from his audience. Then he took the same material and by coupling it with body gestures, exaggerated facial contortions, and comedy bits after the manner of "mugging" comics, easily produced gales of laughter from his guest audience. Do not forget that the real audience of a broadcast is somewhere "out there" in front of a radio. Produce your show for those who are "out there" and not for the handful in the studio or theatre who are watching. The immediate response of laughter to a gag is manna to an actor, but the director should see to it that the attention of the listening audience is not sacrificed to an actor's vanity.

2. THE TALKS BROADCAST

In many ways the talks broadcast is the simplest to produce. What does it involve? Merely placing a speaker in front of a microphone and letting him talk for 14 minutes and 30 seconds, then having the announcer finish off with a few well-chosen words of thanks? There is more to it than just that, for speakers vary one from another in an infinite number of ways. There are, for example, wide differences in temperament. This one is cantankerous, that one is tractable. One is indifferent to the presence of a vast listening audience, and another is terrified. There are numberless differences in voice quality, pitch, volume, diction, resonance, and responsiveness to suggestion or direction. Because of these differences and because of the wide variety of personalities approaching the microphone with different equipment, the director's job in putting on a talks broadcast can be an interesting challenge.

With the advent of radio a curious misconception having to do with talking into a microphone was born. The notion got abroad that some persons have "microphone" voices and others have not, as if certain persons were equipped by destiny with an arrangement of lungs and vocal chords that makes them ideal radio speakers, whereas others without the fortuitous adaptation remain outsiders who can never hope to get into the inner circle. It is high time that the notion is dispelled, once and for all. Anyone who can talk has a microphone voice. It may not be so good a voice as the next one, but if its owner can bang on a table with a gavel or get to be president of something or other, sooner or later it will be pouring into a microphone, and it may be the director's job to make it sound as palatable to the ear as possible. It is with that job that we now concern ourselves.

If we think of the studio in terms of the theatre, the "dead" end represents the stage, and the "live" end, the auditorium. To produce a speaker's voice under the ideal conditions of the studio, he should be placed in such a position that vocal brilliance or liveness is gained without the pickup of too great a reverberatory or "echo-y" quality from the live or auditorium portion of the studio. Exactly where that position may be can vary a great deal, depending upon the presence or absence of live surfaces in a studio and also upon the type and directional characteristics

of the microphone employed, but a general approach to the problem can be indicated, and each director will remember that special and individual acoustic conditions call for variation in microphone placement. If a speaker is to talk into a microphone facing the live end of the studio, the effect, unless the live end is sufficiently draped with curtains of sound-absorbent material, will in all probability be roomy and, to a varying degree, echo-y. On the other hand, if the speaker talks into a microphone facing the dead-end side walls with the axis of the microphone running parallel to the length of the studio from dead to live end, much or all of the roomy, echo-y quality of the speech may be killed.

Care must be taken that all the liveness of the studio is not killed. In other words, some flat surfaces of the wall should be left uncovered by drapes to ensure a measure of resonance that will give to the voice the necessary quality of vitality and brilliance. A studio too dampened with drapes is worse than one that is too reverberatory. The director should see that the microphones are placed in such a way that there will be balanced absorption and liveness.

The height of the microphone should be adjusted quickly to the level of the speaker's mouth or possibly a shade lower. The natural tendency of the head while the speaker is talking from manuscript is to droop, and this tendency is compensated for by leveling the mike slightly below the speaker's mouth. Also, if the mike is too high above the level of the mouth, the head will tend to rise and the throat to become slightly constricted as the broadcast proceeds. When the throat gets even slightly constricted, the pitch of the voice rises, and a shriller, thinner voice quality ensues that may be unpleasant. Adjust the height of the microphone to a point at which the speaker is comfortable while he is speaking into it. The business of leveling the mike should be undertaken quickly, not obviously, especially if the speaker is new to the mike. People can become confused if they are made to feel that they are completely at the mercy of technicians. Remember this in giving instructions. A few simple instructions will almost always suffice. If they are kept simple, a person with the I.Q. of a newt will respond and deliver an acceptable talk, but if the instructions are complicated and calculated to impress the hearer with the importance of the director, making him a sort of cross between Reinhardt and

Marconi, almost anything will come out of the mike once the speaker gets his innings.

For the talk at a standing mike, the speaker should be told to hold the script up on the dead side, at the level of his eyes. Thus he stands directly before the mike at a distance of about 1 foot from it. It is then impossible for him not to be on beam and equally impossible for the words not to be directed properly into the microphone. As long as the script is held up, the speaker cannot help but mike clearly, but if the arm begins to droop, the head will also droop, and, as the head droops, the words are spoken downward rather than straight at the microphone. The more he persists in speaking in this direction the greater will be the distortion of the voice quality away from the normal. The warning to a speaker to keep the script up will do more to bring about clean miking than any other single injunction.

Also, a speaker should be asked to speak at a normal level of volume, such as he would use in speaking face to face with a friend in normal conversation. Teachers, lecturers, political speakers, and others who are used to addressing gatherings have the habit (a necessary one in auditoriums) of "projecting" the voice, that is, giving it a propulsion that will enable it to be heard at a distance. Such propulsion is unnecessary in speaking into a microphone—in fact, it is a liability, since it forces the engineer to hold down the volume. Other general instructions will help in producing a smooth broadcast. Speakers should be told not to kick, touch, handle, or cough into a microphone. A quick demonstration of what to do and what not to do is often very effective. In the course of it, the director should show how unavoidable coughing is done to the dead side of the mike rather than straight into it. Make sure that scripts are not clipped together, since clipped scripts aggravate the likelihood of rattling paper as pages are turned, producing an unpleasant extraneous sound.

If the speaker is a person a cut above the average, there is no reason why he may not be burdened with a few additional instructions, as, for instance, the two simple signals that are part of the everyday life of every studio in the country, the signal to speed up and the signal to slow down the program. Such a speaker may also be told that, once on the air, he should not be

too dismayed by a slight tug backward or a slight push forward, either of which will occur if the director wishes to adjust his distance from the mike to gain a better pickup. The signals to slow down or hurry up are not often responded to properly by inexperienced radio speakers. It takes experience to get used to quickening or slowing a speech without the loss of ideational value. It takes time before a speaker gets the trick of slowing down or hurrying up imperceptibly. It takes time before a speaker can respond to signals without getting flustered and losing the place in the script. The blame for this can be placed upon the producer, especially when he gives the speaker a signal as though the fate of the world depended on it, pushing his hand almost into the speaker's face to make sure that he has seen it. A director should never make a quick gesture at a speaker who is on the air. Stand near him for a while to let him get used to your presence, and then, almost as though it were a simple bit of routine, make the signal, whether it be to cut or to hurry up or to slow down. In this way there is small chance for the panic that can easily ensue when frantic signals are thrown. It is a good idea to make the signal along the edge of the table, within the line of vision of the speaker while reading, making it unnecessary for him to lift his eye from the script. A quiet, unexcited outward demeanor can be very helpful in producing a smooth show, for if the speaker by a quick glance at the director's face gets the notion that things are not going along nicely he will be more likely to blunder.

It might be asked, how does one finish a program if speed-up or slow-down signals are taboo? One of the best ways is to make sure in advance of the broadcast that the speech is short enough in reading length to allow for almost any reasonable variation that might occur between the reading time and the air time. Never put yourself in the position of the unfortunate young director who, when he noticed on a talk broadcast that in another few seconds the show had to finish, simply reached up, clapped one hand over the lady speaker's mouth, and proceeded to give the finishing cue. He was fired, of course, but his conduct typifies a drastic approach to the problem of timing that should be avoided.

In the half-hour programs in which there are several speakers, the problem of finishing on time would be much simpler if such

programs were planned to last theoretically, say, 26 minutes and 30 seconds rather than 29 minutes and 30 seconds. Speakers invariably write their talks to last longer than the time allotted to them. Asked for an 8-minute speech, they will usually write one that lasts 10. A half-hour talks broadcast planned for 26 minutes and 30 seconds will entail less cutting and less conflict with touchy speakers who say they cannot possibly cut a word from their speeches without causing grave injury to the republic. Plan the program short, and there need be no fear that such a broadcast will not last 29 minutes and 30 seconds.

If, on sizing up the speaker, the director has any doubts about his or her ability to stand up during the length of a talk, because of old age or nervousness or illness, he should provide a microphone on an announce stand for table use, allowing the speaker to talk while he is seated. There will be no difference in the quality of pickup. Some very experienced and very able microphone personalities do their best work at a table mike.

The technique of production is the same as for the standing mike with the exception that the script need not be held in the hand but may lie on the table under or to one side of the mike, with the pages loose and unclipped. The speaker should be cautioned about reading down at the table rather than into the mike. If a speaker seated at a table wishes to hold the script in the hand, there is no reason why he may not do so. Simply make sure that the motion of turning from one page to another is not accompanied by the rattling of pages or that the microphone is not hit by the turning of pages. Make sure that the speaker is seated as comfortably as possible, that he is not dangling, so to speak, on the edge of the seat. If the chair is close enough to the table, the speaker will be brought into such a position that he cannot escape miking accurately on beam. Some speakers, when seated, tend to sway somewhat from one side to the other. Caution them to hold to the straightforward position without swaying.

So far our discussion of the talk program takes into account only ideal studio conditions. It may be found—and in large studios this is likely to be so—that the studio is too boomy and resonant, that something more drastic than simply facing the speaker toward a dead wall will be necessary to take up some

of the boominess in the voice. If screens are placed about 2 feet back of the speaker or his chair, leaving, of course, clear sight lines from the speaker to the control-room window, it will be found that all or much of the resonant or boomy quality may have disappeared. The more a speaker is hemmed in by sound-absorbing screens the more the resonant or live quality will be eliminated. A point will be reached where such deadness exists that the result will be useless for the purpose of the talks broadcast. This situation of course, should be avoided.

Before he goes on the air, a speaker should rehearse to a certain extent in order to ensure a good broadcast. He should first be requested to read a few lines of his prepared address to enable the engineer to get a "level," to discover whether he is in front of the microphone, too close or too far away from it, and whether, consciously or not, he is committing any fault that may interfere with the best possible transmission of sound. Both the director and engineer should listen carefully to this test reading. Usually they will be in agreement in their analysis of what may be wrong with the speaker's voice production, for the faults are usually standard. He speaks too loudly or too softly, his diction is not clear, he edges in too close to the microphone as the talk progresses, he is off beam, he is too far away from the microphone, he rattles his script, he touches the microphone with it, he tends to "talk into his whiskers"—in other words, drops his head as he speaks so that the sound is directed downward rather than outward—he clears his throat or coughs into the microphone, he sways from side to side as he speaks, he hits the table for emphasis, or his sentences trail off into nothingness. These are some of the most flagrant faults that occur, and they should be tactfully corrected. Suggestions should be offered in a spirit of helpfulness, and if they are given in that manner they are invariably accepted. People always want to speak well over the radio, and if this is borne in mind, there will be no difficulty in making suggestions that will result in better production.

With practice one can listen to no more than a few lines and analyze very quickly the quality of voice production. Many of the mistakes outlined above can occur in the reading of a few lines. A speaker can cough, clear the throat, hit the mike with the script, and talk too loudly in a single sentence. Obviously such gaucheries are not intentional. They stem from nervous-

ness or unfamiliarity with the demands of the microphone, and the director becomes accustomed to their occurrence.

It is usually impossible to "direct" a speaker on an ordinary talk broadcast. "Direct" here means simply to suggest a slightly more showmanlike attitude toward the rendition of the speech than the speaker intends. Radio brings before the public many people who are specialists in their own fields—fields that more often than not do not demand that their experts speak. Usually these speakers have only the most limited experience in communicating verbally their ideas on the subjects in which they are pre-eminent. People in general have limited experience in addressing audiences, and few people pay attention to their word production. It is astonishing how few people are aware of the sound of their own voices. Invariably a person hearing his voice for the first time will hesitate to claim it as his own. The closest a director can come to directing a speaker is to suggest improvements. He may, for instance, correct the strange things that happen when a period is approached. The speeches of some speakers diminish to a vocal nothing—in other words, they drop the tail ends of their sentences. Others pay scant attention to periods, scarcely pausing at all, but plunge right ahead into the next sentence. Some are so concerned with the precise and accurate pronunciation of the words that the meaning of the words escapes them. They make sure that the d's and the t's are all pronounced as they should be, but from their inflection one would think that death, fire, flood, and the time of day all have equal importance. Inexperienced speakers will often emphasize unimportant words that do not deserve emphasis. Confronted with defects such as these, a director can be of help in making suggestions, and often, by simply pointing them out to a speaker, he will succeed in eliminating all or most of the defects.

Some speakers are "voice drunk." They get so enraptured with the sound of their own tones that they can hear nothing else, not even the promptings of common sense that should dictate a more rational delivery of their own lines. Strictly speaking, this is a fault more often found in announcers than in guest speakers and can only make the judicious grieve. When poets read their own material, there is very little that can be

done about it. They will go about the business according to their own patterns of thought and emotion, and a director would be a Yahoo who would dare to intrude upon their Delphic soothsaying. Get them to speak up, keep the material clean, and, for the rest, leave them alone.

Edward Murrow, formerly Columbia's director of talks and now director of European broadcasts, prepared a useful set of directions having to do with the preparation and delivery of the radio talk. They form a pertinent conclusion to this discussion. Effective radio speakers realize that they hold or lose the listener in the first minute or two. Therefore, they make a point of doing these things:

1. They select a subject interesting, vital, and important to people.

2. They find out what interests people by asking those who really represent different sections of the radio audience, such as the businessman, the manufacturer, the scientist, the teacher, the young student, the man in the street, the laborer, the motorman, the clerk, etc.

3. They write as they talk.

4. They make their talks alive with things of homely interest.

5. They make their remarks short, terse, and direct to the point.

6. They make their speeches concrete and specific about a limited number of points. They know that too many ideas confuse the listener.

7. They write their speeches so as not to crowd the time allotted. They allow themselves ample time for emphasis, for using a free and easy manner without galloping to a finish.

8. They use simple, understandable words that every listener knows. They realize that it is unnecessary to impress on the listener that they know all the big words in the dictionary.

9. They avoid long, pedantic speeches.

10. They avoid statistics as they would the plague. Similes by word pictures are always best.

11. They avoid humor unless they are qualified to use it. They know that it takes a natural humorist to tell a funny story.

12. They never make the direct statement that they are going to prove so and so. They know that this always makes a listener antagonistic.

IN DELIVERING THE SPEECH

13. They approach the microphone as if they were discussing matters with a group of acquaintances.

14. They speak sincerely and convincingly.

15. They pace their talks as they would in face-to-face conversation.

16. They always avail themselves of studio time for rehearsals at the broadcasting station.

17. They follow the meaning of their remarks rather than the actual commas and periods.

18. They time their speeches at rehearsal, and they carefully watch their time.

19. They leave the audience wanting more.

20. They broadcast as they talk, not as they read.

21. They do not cough or clear their throats when they are near a microphone. They have their manuscripts on loose sheets, never clipped together. They know that in this way, if they are standing, they can drop each sheet to the floor as it is finished.

22. They say nothing for a few seconds before starting or after closing. They are conscious that the microphone might be open and might pick up such words.

CHAPTER 10

TYPES OF PRODUCTION—II

1. THE AUDIENCE-PARTICIPATION BROADCAST

There is a type of broadcast, the quiz or audience-participation type, that is moderately recurrent. It usually involves a studio contest or some similar setup in which the audience participates. At first glance such programs seem to offer no special problem or challenge to the director. What could be simpler than to bring to the microphone a variegated group of people, ask them a few contest questions, scatter a few witticisms along the half hour, award the prizes, and end the program? Paradoxically, such programs are carefully worked out formulas of formlessness. It is their formlessness that presents the problem. These programs are a combination of the known and the unknown, and it is against the unknown that the director must prepare himself. He does this by placing the conduct of the program in the hands of a coordinator, an umpire, a judge, a quizzer, someone around whom the show should center, someone who can control the entertainment and see that it follows along a predetermined course. This umpire should have a sense of showmanship, an awareness of entertainment values, should be a quick judge of the superficial traits of humanity, and be able to dominate quickly, with tact and firmness, any situation with which he may be confronted. He should have patience, a sense of fairness, and, more than anything else, be able to talk extemporaneously.

On audience-participation broadcasts the script is no more than a guidepost, a stage property to take the participants from one unit of the program to the next. It opens the show, tells what is going to happen, fills in or provides a resting place in the middle of the show where the scoring must be done, and, finally, closes the show. The script may also contain contest ammunition, questions, words to be spelled, tongue twisters, or whatever verbal material is part of the contest.



A simple setup for an interesting and successful program. Clifton Fadiman faces John Kieran, Elmer Davis, Dorothy Parker, and Franklin P. Adams.

An audience-participation program should never be built around a person who is not a ready improviser. It should be built around a person who is not only a ready improviser but who is, to use the vernacular of the ring, a verbal counterpuncher, that is, a contest conductor who can be witty and amusing but not until the contestant before him offers him an opening for his wit. It is difficult to be amusing at the expense of someone who answers questions with a single and obstinate "yes" or "no." But whether he is answered in monosyllables or not, a contest master of ceremonies should be able to keep the program bouncing along, filling in here and there with good-natured banter, ad lib comment that does no one harm and offers the contestants a chance to open up and answer freely. The contestants should be made to feel communicative, and the only way to do that is to draw them out.

Let us consider as one example of the production of the contest type of broadcast, *The Word Game*, which was what its name implies, a contest having to do with words, their meaning, spelling, usage, etc. It was conducted by Max Eastman, the well-known writer, critic, and lecturer. Mr. Eastman was admirably equipped to conduct such a program. He had had years of experience as a public speaker, is gracious, witty, extremely well-poised, has a fine sense of fairness, and his whole career has been devoted to the written and spoken word. His previous appearances before the mike had been few, and consequently the technique of conducting such a program was new to him, but his interest in the program was so high that very quickly he developed into an adroit microphone master of ceremonies. Very quickly he learned not to "throw," *i.e.*, project his voice. In other words, he accommodated his lecture-speaking manner to the needs of the microphone.

Consider the physical needs of producing a program similar to *The Word Game*. If the program is to be produced in the theatre, the guest audience and the show on the stage are, of course, easily separable, but in the studio the rows of seats of the guests should be far enough away from the contestants to make prompting or coaching impossible. Usually there is no trouble from this source, and when it does occur, it is due only to the overzealousness of the contestants' friends.

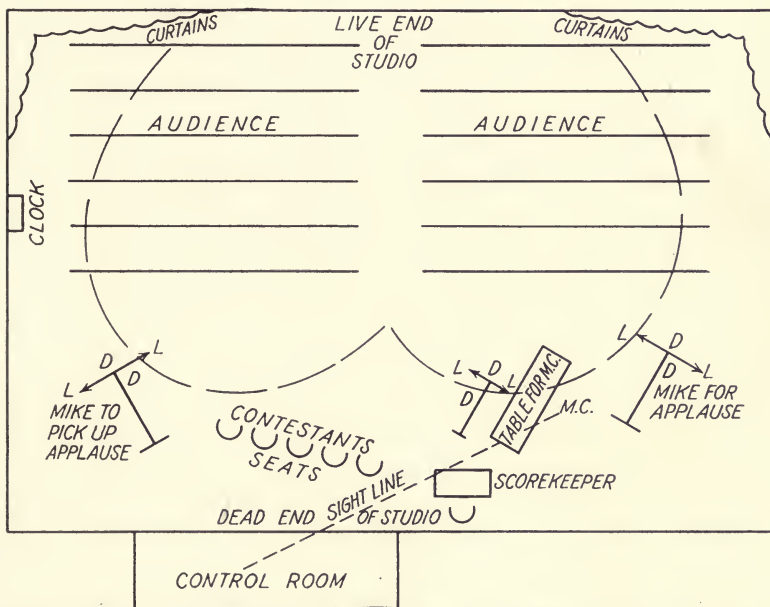
The eight-ball type of microphone is extremely helpful on this kind of show, because the contestants need not mike quite so

sharply. On the velocity or uni-directional dynamic mikes the contestants must be guided accurately onto the beam of sensitivity to sound. An illusion of depth is, of course, alien to the needs of the contest show. By the use of the bi-directional-velocity microphone, the audience may be placed on the dead side of the contest mike, and separate microphones can be set up to control their responses. Two velocity microphones to pick up studio applause, used in the manner illustrated in the diagram, are effective. In this way all the response from the audience is utilized, and none of the applause is lost or weak in volume by reason of the fact that its source is too far outside the beam. The master of ceremonies should be in a position where he may see the control room, the clock, the audience, and the contestants. To bring this about may require some ingenuity on the part of the director, but it is a setup he should try to achieve.

If the master of ceremonies works before a high padded table, such as is commonly used for sound effects, it will be found to be helpful. He may then have a padded sound-absorbent surface before him on which he can place his script or whatever impedimenta are essential to the program. Note in the diagram the position that the two mikes assume in order to pick up studio applause. They should be high in the air and tipped slightly downward. They will then pick up sound directed from slightly below rather than from over the heads of the audience. Placing the mike on the boom rather high up precludes the possibility of picking up conversation from auditors close to the mike. It can be seen from the diagrammatic lines drawn outward from the mikes that substantially all of the audience is covered when two mikes are used, whereas if only one were used, that part of the audience response coming from those seated toward the dead side would lack definition and volume.

All contest programs, like any other well-produced program, depend to a great extent for their smooth running upon the amount of foresight the director brings to bear on the job. If he anticipates all the things that might go wrong on the air, he can take steps in advance to prevent their happening. To a surprising degree, contestants will "take direction" that will prepare them for their ordeal by kilocycle. They are invariably persons who have only popular conceptions of radio. They are persons who probably have written in to the radio station because

their desire to win a dictionary or a \$10 bill has transcended their terror of the potential listening audience. Possibly they have boasted around the bar or the fireside that it's a cinch! "Why, anybody can get up there and answer those dopey questions!" they say, but knowledge, cultural background, encyclopedic information, and bravado all have a way of disappearing the nearer the contestants come to the zero hour, and they become pliable material in the hands of a director who will take a little



Studio and microphone setup for Max Eastman's program The Word Game.

time to tell them encouragingly what he wants them to do. For this reason he should make sure that they are at the studio at least a half hour before the show takes air. In most cases a half hour will do. The longer they stand around a studio before air time the more chances there are that they will tighten up and get into a slight panic. When they come to the studio they should be introduced to the master of ceremonies, who will, of course, be friendly and disarming, drawing them out by questions, so that by the time the show takes air he will have acquired a slight knowledge of them that may help him to get them to relax and

talk naturally about themselves or answer questions fully and freely.

Next, give the contestants a simple lesson in mike technique. Tell them in nontechnical terms where they should stand and deliver. Tell them to talk straight into the microphone and not off to one side, not to peer around the mike when they are talking as though it were an obstacle between them and the master of ceremonies that should be removed. Instruct them not to take hold of the mike. The more timid feel in need of something to hold them up, and the nearest support at hand is, of course, the microphone. Tell them to be careful when they come up to the microphone not to kick its base accidentally, because it will then make a disagreeable sound that the engineer cannot control. And, finally, tell them, if they *must* cough, clear their throats, or sneeze, to remember to do so off to one side of the mike. Stand at the mike and give them a demonstration, a simple illustration of what not to do and what to do, and you will often be surprised to see how well laymen remember what professional actors often forget.

After the master of ceremonies has given the engineer a simple voice test, invite each contestant up to the microphone to test volume. The master of ceremonies may start an impromptu conversation with them, and if the contestants speak too loudly or not loudly enough or are too close or too far away from the mike, tell them what you expect from them. Remind them not to be upset when they are on the air if the announcer or production man pushes them slightly closer to or pulls them slightly away from the mike. If you find after the program goes on the air that one of the contestants betrays some very bad mike fault, when he has finished his first stint or round at the mike, go to him and correct his mistakes. Before contest programs make sure that the contestants are aware of whatever physical movements are necessary. Do they form in line? On the completion of their turns at the mike, do they take seats, or do they go to the end of the line? Is there any part of the program during which they may sit down? Be sure that you tell them all these things, because, once told, there is every reason to believe that they will respond. If they are left to find out such things by trial and error, there is bound to be confusion that will

transmit itself to the program and make for confusion in the flow of the entertainment.

On contest programs, it is wise to identify each contestant in a clear-cut manner so that the master of ceremonies may address each contestant by his or her correct name. Identification of contestants adds to the interest of the listeners, who like to root for a winner. If they are rooting for Mrs. Unabhängigkeitserklärung from Milwaukee or Johnny Dolcefarniente from the Bronx, they like to hear them called by name. Now the master of ceremonies should not be burdened with remembering such names. Cards should be made up about 15 inches long by 5 inches wide, with enough string attached so that they may be hung like a medallion over the head and come to rest on the contestant's chest. In big letters the contestant's name should be printed across the center, and down in the left-hand corner, in smaller but clearly readable print, the town and state from which he comes should be printed. In the lower right-hand corner print his occupation. In the upper left-hand corner, write the number that indicates the contestant's position in line. With such clear-cut identification the master of ceremonies will have no trouble in addressing the contestant by his correct name. It is there before him as big as life, and since he does not need to rack his brain trying to remember the right name at the right moment, his attention is free for other matters of more importance.

An invited audience should be admitted about 45 minutes before air, and doors should be closed 10 minutes before air. To a certain degree radio has changed the function of the audience. For hundreds of years audiences have had nothing else to do but what their name implies, simply to hear. Along comes the radio-studio audience, and it takes on additional functions. It becomes part of the show. Its responses are integrated with the entire broadcast. It must applaud, laugh, stamp its feet; it whistles, cries out, hoots, and jitters; and all these manifestations are, in the right place and on the proper program, looked for—nay, they are evoked, because they are necessary to create a sought-for illusion.

The average invited audience walks into a studio with a sort of awed, wide-eyed stumbling haste. They clamber into chairs.

In a few minutes they become used to the place, but until then there is something about a studio that commands respect. It may be the hard, mechanical self-sufficiency of the place. Momentarily, perhaps, the audience have stepped into a fantastic Buck Rogerish chamber of the year 2040. Perhaps the program is a favorite that they have been listening to for weeks and, since it has become part of their dream life, they know of nothing better than to come to the studio to translate the dream into reality. Perhaps they feel as they come into the room that they are present in some hallowed place where Cantor clowned, where Tibbett sang, yes, where Aunt Jenny baked. They have stepped into a room peopled with the myriad ghosts that have found their way into the cochleae of the nation. But from whatever alien feelings they have they must be quickly wooed. They must be framed into the program that is to go on the air in a few minutes. They must be coaxed into a coherent, responsive, warm-blooded unit. They must be made to feel at one with the kilocycles, and, once warmed up into the right frame of mind—which they reach 30 seconds before air—the program can take the plunge into the ether. This frame of mind can be brought about by a pleasant little speech of welcome by the announcer and the introduction of the master of ceremonies, who can then take over and continue the warming-up process.

To put The Word Game on the air properly, the following personnel was essential: a director, an engineer, a production man, a scorekeeper, and an announcer. The production man should do nothing but keep time, keep the director informed of the time, and occasionally help to keep contestants on mike. Besides announcing, the announcer should see that each contestant is properly introduced, and he should act as marshal to see that the line of contestants is kept moving, each one ready to move up before the mike smoothly, without break. The listener should never get the feeling that when the master of ceremonies has finished with one contestant, an awkward pushing and shoving are going on in the studio to get his successor in position. A constant repetition of pauses after each contestant is discomfiting to the listener and creates an uncomfortable break in the pace of the show. The announcer also acts as a liaison officer between the scorekeeper and the master of ceremonies, making sure that the program keeps moving along until the

scores have been computed and handed up to be read by the master of ceremonies or the announcer himself.

The director should be everywhere, discreetly and quietly moving about, now in the control room, checking time with the production man, now out on the floor, passing along one or two word notes written in large print to the master of ceremonies—notes that tell him to give one more round of questions or to cut short a round; writing a longer note telling him that he should have given Miss Blitzen 100 on her answer, because Webster-Merriam, the program authority, says she was right. On signal from the engineer, he should be ready to adjust the mike position of any contestant. He should have his eye on the program and the clock, noting when the show loses time. When this happens, he must consider ways and means of making it up. He may even be called into the control room to answer a telephone call from an irate listener who wants to tell him “that that little lady, Miss Blitzen, has fallen into a den of thieves, and if we don’t hurry up and tell everybody that she is the best speller in Bergen County and that we don’t mean to be unjust to her and will she please accept the prize, he’ll come right down to the studio and fix our wagon for us good and proper.” The director must have his ear on the program content. In the heat of the contest, the master of ceremonies may assert that he will clear up a certain word, and, before he has had a chance to do so, the program moves on; or he may give a contestant a word or ask a question that gets no response, after which he passes on to the next contestant and asks a different question. He has thus left a part of the program hanging in mid-air, and listeners resent such slips, usually writing in to air their grievance. The director should catch this sort of error and forestall such mail if he possibly can. A note passed in time to the master of ceremonies will clear up the point and prevent a flood of protest letters.

It is good production to rig the program in such a way that tie scores are prevented if it is at all possible. When contest programs end in a tie, even though duplicate prizes are awarded, there is a note of uselessness about the whole program. A duplication of prizes increases the cost of the program, and shrewd producing should prevent this if possible. By rigging the program, it is not suggested that dishonest methods be used

to make sure that there is a winner, but when the scorer has passed on the information that there is likelihood of a tie, by judicious framing of questions the master of ceremonies can reduce the possibility of there being one. He can ask more difficult questions of all contestants; possibly he may become more severe in passing on the answers, and he may offer less assistance in repeating the question asked. This procedure tends to stiffen the contest, and the hunger of the listeners for a winner is satisfied.

Inasmuch as the contest type of broadcast has problems in timing peculiarly its own, let us consider them at this point. Since the script is simply a guidepost and the greater part of the program is extemporaneous and since the contestants are presumably amateurs, unresponsive to the signals and devices ordinarily used to stretch or shorten the show, how can a director put on such a broadcast and bring it to a close gracefully at 29 minutes and 30 seconds without conveying to the listener a feeling that the show has been pushed off the air? How can he time that which has not been rehearsed? When one contestant takes 10 seconds to answer a question and another answers a similar question in 1 minute and 5 seconds, how is a director to know what to do about time?

Do not depend upon your own resourcefulness to get audience-participation broadcasts off the air on time. Do not hope to hurry them along in one place and slow them down in another in just sufficient proportions to enable them to finish on time, for while there are occasions when such a method will undoubtedly work, there is no guarantee that every show will be com-
plaisant. Some contestants will refuse to respond to any promptings whatsoever. Too much time will be spent on some parts of it and not enough on others, and no amount of goading will help you to produce the broadcast you intended. To concoct a foolproof method of timing "The Word Game," a chart was made showing the units of entertainment of which the program was composed, and for each unit a timing was assigned, a length of time that that unit would consume in a perfect production. There were eight units, as follows:

1. Opening.
2. Definitions.

3. Spelling.
4. Intermission (or middle announcement).
5. Slang.
6. Guggenheim (a parlor word game).
7. Announcement of the winner.
8. Close.

When it was laid out, showing the amount of time that would be consumed by each unit on a perfect broadcast, *i.e.*, one on which the various units would consume no more time than their importance to the program as a whole would dictate, the chart read as follows. (The program went on the air at 9:30 P.M.)

	Open- ing	Defini- tions	Spell- ing	Inter- mission	Slang	Guggen- heim	Winner	Close
Length of each unit in minutes and seconds.....	2:00	11:00	4:00	2:30	6:00	1:45	:30	1:15
Cue time at close of each unit.....	9:32:00	9:43:00	9:47:00	9:49:30	9:55:30	9:57:15	9:57:45	9:59:00
Total of unit time...	2:00	13:00	17:00	19:30	25:30	27:15	27:45	29:00

Plus 30 seconds for spread equals 29 minutes 30 seconds.

Every broadcast of The Word Game was produced against the above ideal timing. If the unit devoted to definitions finished comfortably a minute early, there was a minute to be added to another unit—say, spelling. If the spelling time then consumed 5 minutes, the program was back on schedule again. The section of the program devoted to Guggenheim was an amusing unit of the broadcast following the slang unit, and the success or failure of the contestants in the game of Guggenheim had no bearing on the score. It was during that unit that the scorekeeper was adding up the final score, and the 1 minute 45 seconds allotted to it was a flexible timing. The scorekeeper could use 30 seconds more if he needed them to make absolutely sure that his scoring was accurate. If he used that 30 seconds, stretching Guggenheim to 2:15, that would take up the slack of the 30-second spread which was time treasure laid up in heaven throughout the length of the program and provided for in the ideal time schedule.

The flexibility over and above this ideal schedule was contained in the very nature of each one of the units. For example, there were five contestants, and 4 minutes were allotted to spelling. If they were brisk, intelligent contestants there were always two rounds of spelling, in each of which the contestants were asked to spell two words. If there was need to speed up the program, a note to Mr. Eastman asking him on the last round to call for only one word would quickly move the unit along. Or, if the definitions unit had consumed an inordinate amount of time, the spelling unit could easily be limited to one round of two words each, and the program would then be brought very quickly to the intermission unit, that section devoted to a brief interlude wherein Mr. Eastman would humorously answer questions about words sent in by letter and wherein the announcer would call for future contestants to appear on the broadcast.

A production man armed with such a chart had only to look at the clock, and the quick consultation with the director and a signal or note passed to Mr. Eastman would be all that were needed to bring the program along into the proper time groove.

The director, moving about from control room to the studio, should coordinate all the elements of the whole broadcast quietly, without undue outward excitement. He should do everything with a minimum of outward show of any kind, whispering a word here, passing a note there, checking with the engineer with simple pantomimic signals, never letting the audience or the contestants feel that they are being herded or prodded into giving a show. He should give the appearance that he is listening to the show and enjoying it as much as any visitor to the broadcast. He should avoid looking up at the clock as if every movement of the second hand were fraught with something potentially dire and baleful. If the studio audience sees the director's head bobbing toward the clock every 10 seconds, it will not be long before everybody's gaze will be shifting toward the clock, too, and instead of enjoying the performance at the microphone the audience will find the antics of the desperate pilot far more productive of entertainment.

Each audience-participation show may present its own individual problem of production, but The Word Game is a typical example, and the method used to get it on and off the air may be of use to the producer contemplating the use of this technique.

The spelling bee is, of course, an extremely popular game show, and its production may follow along similar lines. One of the most common questions that arise in connection with spelling bees has to do with the proper technique of spelling the contestants down within the allotted time. There is admittedly a difficulty here, but the master of ceremonies or judge controls the situation to a large extent. The lists of words that form the ammunition for the spelling bee should be chosen carefully, and during the course of the broadcast he should try to accommodate the difficulty of the words to the amount of time to go that remains. In other words, the judge should have several lists of words graded for convenience into easy words, hard words, very hard words, and real bucking bronchos of words. By manipulating the lists properly, by picking simple words, for example, he may easily extend the life of the contestants before him, or, with reasonable luck, when he wants to cut a few contestants down in their tracks, he can reach out for the marked list of tough ones and let fly. It is a technique that requires practice, but it can be managed.

The miking for the spelling bee may be simplified if the contestants approach the mike from two sides. If two teams are contesting, while a member of one team is at the mike the member of the rival team should be close to the mike, ready to step into position quickly as soon as the spot on the beam is vacated. If youngsters are contesting, a platform should be used upon which two people at a time may stand, and the announcer should see to it that contestants are marshaled quickly into position without loss of time. Lines should be kept straightened out so that teams will not commingle, a tendency that they will have in the excitement of combat.

Several additional points should be kept in mind in connection with contest broadcasts. First, before such shows go on the air, contestants should be warned in advance of station rules that might be transgressed accidentally. For instance, they should be warned not to speak in a derogatory manner of any persons, race, or religion. As far as may be foreseen, questions should be avoided that might possibly evoke answers that are opposed to the station or network policy. There is always a slight possibility that some embarrassment may result from a program in which people are free to stand up and speak their pieces, but

the instances in which offense has been given are surprisingly few.

Applause should be held in check when its appearance might be a bore to the listener. Everyone has heard studio audiences burst into paroxysms of joy when someone has just managed to stagger through a successful spelling of "ectoplasm" or "significance." There are moments when applause can be suggested skillfully at just the right moment if the program begins to sound a little hollow and dull, but the director should never try to work a contest up to a specious frenzy by egging an audience on to applause that passes beyond the boundaries of common sense.

2. THE CHILDREN'S BROADCAST

It is difficult to restrain expressions of wonderment at the amazing competence that is met with not only in the professional child actor but also in the casual child guest before the microphone. Day in and day out, children in radio are giving performances that, for emotional content, restraint, mechanical technique, cooperation with the control room, quick thinking in the face of possible mishaps, and all-round troupng, would put to shame many of their elders. When children do not respond to direction the fault is more frequently with the one attempting to tell them what to do than with the children themselves. Children can absorb a great amount of direction, and, when directed properly, can give back in performance a great percentage of what they have been asked to give. The professional child actor is frequently an amazingly sensitive and pliable artist. Billy Halop, the twin Mauch boys, Walter Tetley, Junior O'Day, Estelle Levy, Vivian Block, the Donnelly boys, Arthur Anderson, Jackie Kelk, Jackie Jordan, Joyce Gates, Kingsley Colton, Sybil Trent, Jackie Grimes, and Betty Philson are boys and girls who have received most of their training in radio, and every one of them can carry the burden of an entire broadcast and do it complete justice.

Most professional children in New York and on the West coast are sent to schools that are geared to the needs of their profession. In New York they attend the Professional Children's School, where at any time during session they are subject to calls for their services from the broadcasting stations or recording companies. They leave the classroom, do the job, and return

to school to pick up where they left off. Such interruptions are commonplace and call for no questions.

Often it is asked, how should one go about producing a broadcast with child actors? A director will encounter the most successful results if he accords children the same adult-minded approach that he uses for adult performers and if he employs the same standards of discipline that prevail in producing a show with grownups. Children should learn quickly that everyone is in the studio for business, that there are exacting routines to be followed, and that they are expected to put their whole minds on the job. Directions should be explained to them carefully and in detail. They should be given clear-cut explanations of the characterizations that are expected from them, and these explanations should be couched in simpler language than would be used in addressing adults. Abstruse directions that are part of the understanding of the average grown person may be remote from the understanding of children. Directors who talk above the heads of children should bear in mind that they are speaking to children with the minds and vocabularies of children.

Make-believe is easy for children. In varying degree, imitation seems to be part of their race heritage, and they revel in the opportunity to indulge in it. The director needs only to harness properly their startling facility in mimicry, and he will be repaid in full measure for any pains he may take. He should take care that the mechanical setup is comfortable for them; that they are on a level with the beam of the microphone, and, if they are not tall enough to reach it, the microphone should be lowered or a platform placed in front of it to bring them in range. Care should be taken that they mark their scripts carefully and legibly. When changes in script are made, the making of the changes should not be rushed. Make the changes to keep pace with the slowest child, and do not continue the rehearsal until the slowest child has caught up with the rest. No more than grownups should children be overrehearsed. Simon Legree methods of directing children will invariably meet with disaster. Frantic last-minute cutting of script can be very confusing, not only to adults but doubly so to children. Sufficient time should always be taken to cut without undue rush and excitement. Again the old bromide crops up—everybody should go on the air with the same script.

DIRECTING THE NONPROFESSIONAL CHILD

In producing a broadcast utilizing the talents of non-professional children, the simplest characteristics of the microphone should be explained to them. They should be told clearly, with a complete freedom from technical terms, what is expected of them when it comes their turn to speak. Voice levels of everyone who will speak on the program should be taken, and everyone should be encouraged to speak up in normal full-bodied tones directly into the microphone. Too great a technical burden of miking and cuing should not be placed upon the nonprofessional child.

If the program, or series of programs, requires amateur child actors, the problem becomes more complicated. Auditions ought to be held frequently, and the director should be constantly on the lookout for youngsters who evince a talent for acting beyond that of their fellows. Even after a nucleus group of young amateurs has been built up, the search should still go on. Voices change overnight, and the boy who sounds today like a young angel of eleven or twelve may come into the studio tomorrow with a terrifying croak that is practically Pleistocene. Little girls have a way of sprouting instantaneously into young womanhood apparently just to make it difficult for the director who would never permit them to grow up. Many should be called to audition, but few should be chosen. These few should be trained slowly, given small parts at first to develop confidence, and then advanced to larger, more important roles. This is the way to go about building up the flexible nucleus group of talented youngsters, a group that can be depended upon to carry the burden of an entire complicated broadcast. The boys and girls of the group should be kept interested in their work by letting them try their wings on a wide range of parts that will enable them to acquire versatility. The day will be sure to come when there will be need to fall back upon that versatility, and it is reassuring to have a workable supply of it on hand.

Miss Nila Mack, in charge of the children's programs for Columbia, produces *Let's Pretend* with all the parts played by children. The show has been on the air continuously for over 10 years and is an excellent example of what can be done when

patience and intelligence are brought to the job of directing the children's broadcast.

3. PROGRAM AUDITION PRACTICE

An audition is a trial or test hearing. Anything or anybody that can be listened to can be auditioned—an actor, a singer, an announcer, a potential sustaining show, or a commercial show. There may be auditions of sound effects, of the working characteristics of new studio equipment, of news broadcasts and news commentators. It may be a "live" audition or a recorded audition. A "live" audition is one presented by living flesh-and-blood talent in contradistinction to an audition heard from a recording or "platter." The art of recording has reached a high state of perfection, and it is constantly improving. To the perfection of modern recording methods and the fidelity with which programs are fixed on wax or acetate much of the success of broadcasting as we hear it every day is due.

A program can be produced on the West coast, put in a container, shipped by plane or express to the East, can be heard over and over in audition rooms, picked apart, analyzed, cast into outer darkness, or bought to be broadcast for 13 weeks. Since most live auditions are recorded, a discussion of methods of producing and directing auditions would be incomplete without entering into some of the details of recording practice.

Auditions must be carefully planned. Details must be worked out in advance with as much care as would be taken if the audition were a broadcast to go on the air. An audition, like any broadcast, must be planned and produced under the limitations laid down for it in a budget. Talent, script writing, orchestra, special musical arrangements, studio schedules, script typing, choruses, vocalists, anything and everything that will find a place in the audition should be carefully arranged for in advance. Copyrights should also be cleared. At a glance this step does not seem necessary. There is no reason why material that is protected by copyright may not be auditioned, since auditions are not given public performance, but it is unsound practice to audition something that may not be produced for a broadcast. If, for example, a special arrangement of a piece of music that for some reason cannot be broadcast is offered at an audition, it

may be that very number that makes the audition successful. If, later, apology must be made and excuses offered because the very item on which the success of the audition was predicated may not be produced, very embarrassing situations can result. So do not audition what you cannot deliver, whether it is a song or a singer, an actor, a play, or a piece of music.

Set up carefully all the details that have to do with the recording of the audition. Determine whether you want the audition to be recorded at 78 r.p.m. or $33\frac{1}{3}$ r.p.m. or both; whether the recording is to be lateral cut or vertical cut and whether it is to be taken off on acetate or wax.

An acetate recording is one that may be immediately played back without waiting for complicated processing. A wax recording is one that is made on wax, creating an impression from which a matrix is created and from which, in turn, any number of reproductions may be turned out. Its cost is greater than the cost of acetate for instantaneous recordings.

Let master control know the time you expect to record the audition so that transmission lines from the station to the recording company may be set up. An audition should be conducted, so far as possible, along the time schedule laid out. Think of it as an air show, and if you announce that the audition will be heard at 4:00 P.M., be ready to start at 4:00 P.M. You may be ordered to wait, as we shall see presently, but be ready to go at the scheduled time. Do this not only as a matter of strict production discipline, but also because delays can cost money in overtime salaries for musicians, actors, and technicians. If the audition is a half hour in length, observe the rules of timing, and bring it out on the nose at the end of a half hour. A show that runs over requires an additional recording at additional expense.

Usually a little more than 14 minutes and 30 seconds of show may be recorded on a single platter of the 16-inch size, but running beyond 15 minutes exposes the "take" to the danger of distortion as the center of the record is approached. Running an audition longer than scheduled, necessitating additional records, can run the show beyond the estimated budget cost.

A copy of the script should be in the hands of the recording engineers. They should be in touch by telephone with the recorders and sound levels, and peaks should be tested. Usually

the engineers listen to parts of the rehearsal, and by the time the audition is ready to start, they have made their own tests and are familiar with the show. Often they will make a rough recording of the dress rehearsal, a practice that enables them to be nearly letter-perfect for the real recording job. It enables them to pick out the most favorable spot for changing from one platter to another. By listening carefully they may pick such a spot that when a change is made from the first record to the second, the flow of sound will be so slightly broken that the change will not be noticeable. Such a spot might occur at the end of an orchestral number or cue at the very end of a sentence, at the end of a scene, or in any natural dramatic pause in the script. When cuts are made at the end of a dress rehearsal, the recording engineers should be notified, since such cuts can upset their change-over calculations, particularly if the cuts are made in the first 15 minutes of the show.

Often more than one recording company is engaged in making a recording of an audition. This is sometimes done to make doubly sure that there will be a successful record available at the end of the audition, or it can happen when more than one party is interested in the outcome of an audition and both parties want to engage their recording company to take the show off on a record. If more than one recording company is taking a show, the engineers should be in touch by phone with all of them and offer voice and level test to one as to another. Operating schedules under which studio engineers work give them all the wire and transmission information in connection with any program or audition, but the director should double check with him on recording details so that no slip-up can possibly occur. After complete transmission facilities have been established with the recording companies, it should be remembered that they can hear everything that is being said in the studio. By using the talk-back, the director in the control room is heard, of course, in the studio from which any open studio mike will carry his voice to the recording engineers. This detail is important to remember in starting the audition because the recorders are usually given a cue to start by telling them over the talk-back to record 30 seconds or 1 minute from a given time. By giving them sufficient warning they can get their turntables running up to recording speed by the time the "take" starts.

It is important that the studio engineer should know the location of the persons interested in hearing the live audition. There may be groups gathered in one or more audition rooms, studio executives, possible purchasers of the program, government officials, and advertising agencies in or out of the building to whom the audition is to be piped. The engineer should check to make sure that the lines are set up properly to all such places and that the audition will be properly heard in them. Sometimes interested persons are late in reaching the audition rooms, and it is for this reason that the starting time of an audition may be ordered held up until their arrival. *At the close of an audition, check with the recording engineers to determine whether the "take" was successful! Do not dismiss anyone until you are assured that the "take" was successful!* If it was not successful, it is better to redo the audition then and there than to wait until some future time. To do it at a later time may cost double, but to redo it on the spot will only run into overtime. To do it later will entail doing the entire production over from beginning to end. Not to retake on the spot will mean delay in getting the audition records into the hands of possible purchasers of the program, and such delay can result in the loss of a sale.

Do not spend \$1,000 for an audition and be forced to realize, two hours after everybody has gone home, that you haven't even a \$10 record of it.

THE FORUM OR ROUND-TABLE DISCUSSION

The forum or open-discussion broadcast has recently enjoyed a slightly tentative vogue that gives promise, however, of developing a popular technique that will undoubtedly become a standard technique in the field of educational broadcasting. To the director such broadcasting presents an interesting challenge, for the elements that go to make a success of this type of broadcast are the very ones that do not lend themselves to preliminary coaching or staging. An open-discussion broadcast must be completely spontaneous and unstaged, and it is only when the participants deliver their viewpoints freely and ad lib that a forum is what it pretends to be, a place where ideas may be expressed openly and challenged by a healthy and unfettered opposition.



University of Chicago Round Table. Left, Dr. Eduard Beneš, former President of Czechoslovakia; center, Prof. Quincy Wright; right, Bernadotte Schmitt. All are members of the faculty of the University of Chicago. (The table for the broadcasts of the University of Chicago's Round Table was designed to meet the special requirements of the program.)

The participants in a forum are invariably unprofessional broadcasters, and yet they must deliver their opinions in conformity with the rules of good miking. The director should therefore place his microphones in such a way that the least possible strain is placed upon their miking capacities.

In 1938, the Columbia Broadcasting System, in conjunction with the Progressive Teachers' Association, presented on the American School of the Air a series of forum discussions led by Dr. Alice V. Keliher. A group of high-school pupils was chosen from a dozen different high schools in and around New York, and, as individuals, they represented a cross-section of different and widely varying backgrounds of home and environment. They had had training in group discussion but had never been on the air. On five successive Mondays prior to the first broadcast, the group met in a studio, and many different techniques of production were tried and discarded. At the outset they were told something about the sensitive areas of the microphone. The live and dead sides were pointed out to them, the necessity for speaking with sufficient volume directly into the mikes was impressed upon them, and they were made aware of some of the problems confronting the engineer and the director.

The pupils were divided into two groups. One group remained in the studio, holding an impromptu discussion; the other was invited into the control room to hear for itself the effects of poor miking. Each Monday they would engage in a discussion under the shrewd and sympathetic guidance of Dr. Keliher. The discussion was of full program length, lasting 29 minutes and 30 seconds and was recorded. The records were studied by the groups during the week, and the technique of both discussion and miking was corrected so that by the time they were ready to go on the air with the first of the forum broadcasts, the groups knew what was expected of them. The broadcasts were rehearsed in no sense of the word. The general trend of each discussion was outlined so that the boys and girls would not wander too far afield, and occasionally one of the group would read for a few minutes a digest based on assigned reading. This was done to set the discussion in a direction or a groove, but as soon as the digest was read it would be abandoned, and no further written material was utilized.

At no time was the discussion censored, beyond outlining to the boys and girls a few general rules under which network broadcasting is conducted, in accordance with the rules laid down by the Federal Communications Commission. No race or creed was to be offended, no libelous statements were to be made, no advertised products were to be referred to by name, and no printed material was to be read into the program without previous consultation with the director, so that copyright clearance could be obtained if any were needed.

We learned that a forum group limited to about eight or ten people produced a better broadcast from both the ideational as well as from the production standpoint. The program had a better feeling of give and take about it, a unity and drive and a smoother flow of ideas when fewer than a dozen people were engaged in the discussion.

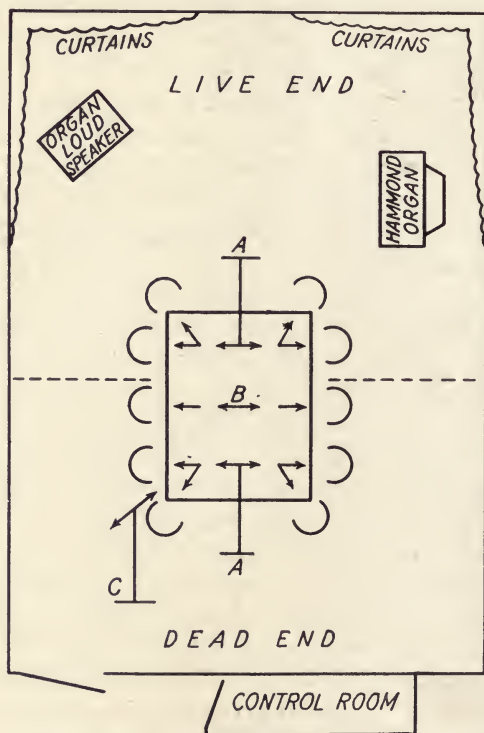
The program had about it better elements for forum discussion when the group were seated about a table than when they were standing. They seemed to have a more relaxed approach to the problem under discussion when they sat around the table and had a better view of the discussion leader. It was discovered that too frequent identification of the speakers held up the flow of ideas and could easily become annoying to the listener. Identification often implied permission was being granted to speak, and this was remote from one of the purposes of the program, which was to allow a free exchange of ideas.

For a similar type of program, a small studio is preferable to a large one. It is necessary to keep all the discussion microphones (we used three) open throughout the program. Any one of the speakers must be free to talk at any moment he wishes to, a circumstance that makes it imperative to leave the microphones open. In a large studio, leaving three mikes open would give the voices a booming, echo-y quality. In a small studio, where voices are more quickly absorbed in the sound-absorbent walls, the echo characteristic is reduced.

If to do so presents no acoustical distortion, it is preferable to set up the table perpendicular to the line of vision of the control room. In this way the director and the engineer can see the face of each speaker as he talks. This would not be possible if the table were parallel to the control room, for in that

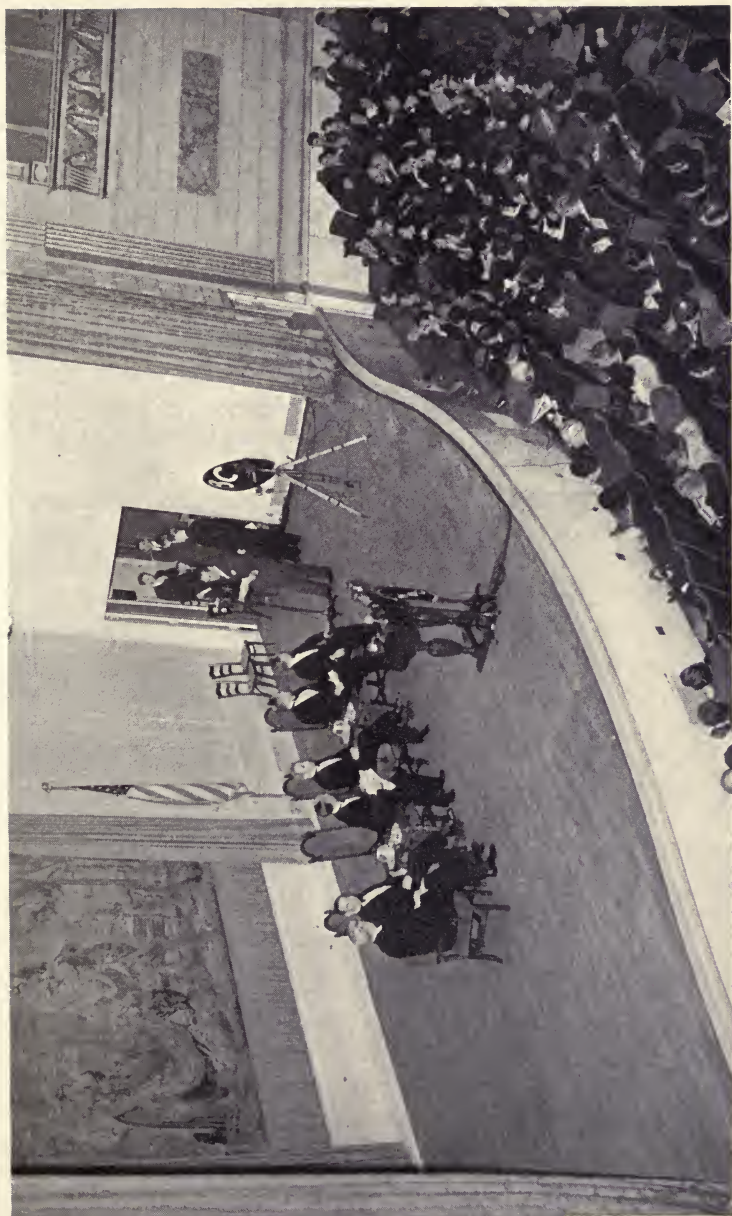
case some of the speakers would be seated with their backs toward the control room and the engineer.

The participants in a round-table discussion should be cautioned to take relaxed body attitudes close to the table, to speak only when they are directly on the beam rather than while they are moving onto it, and not to indulge in careless bumping



A setup for forum discussion. Ten chairs, four velocity microphones. *A*, two "gallows" mikes; *B*, announce-stand mike; *C*, program-stand mike for discussion leader or short dramatizations.

and knocking about of elbows and hands on the top of the table. Absent-minded tapping on the table can be an irritating studio noise that should be avoided. When studio noises creep in after the show takes the air, the producer should go into the studio, find out the source of the noises, and see that they are stopped. If the leader of a discussion group feels freer conducting the discussion from the floor, the setup can be slightly changed. He may be placed at a fourth, program-stand mike facing the end



The stage is set for America's Town Meeting of the Air. Of particular interest is the microphone on the left of the stage equipped with the parabolic reflector. This is pointed toward speakers in the audience to pick up their voices and deflect them directly into the microphone.

of the table where he has a view of everyone seated. One of the seated group members can then designate the order in which the others talk. On the same standing microphone, if necessary, and for variation in the educational technique, a short exemplary drama can be staged, clearly stating the problem to be discussed.

Before taking air each member of the group should say a few words into the mike, enabling the engineer to check levels. A short practice discussion on any convenient topic can be started as a warming-up exercise, not only for the benefit of the group but also as a help to the engineer. The last step before air should be to get everyone in the studio to cough and rid his throat of possible frogs that might be lurking ready to leap out to bedevil their owner and distress the listeners.

Usually it will be found that timing a forum is a simple matter. Work backward, and time only the closing announcement. Let us say, for example, that the closing announcement runs 1 minute. Before air, arrange with the leader to taper off the discussion and bring it to a graceful close 1 minute after he receives a warning signal. Give him the signal 1 minute—to be completely on the safe side, 1 minute 10 or 15 seconds—before the announcer is due to speak. As soon as he concludes the discussion, cue the announcer to start his 1-minute talk, and finishing on time will be a foregone conclusion. It will be found simpler for the director to close a forum from the floor of the studio rather than from the control room. Move freely and quietly about, directing the end of the broadcast from the floor, whispering directions where they are needed rather than relying upon signals passed from the control room to nonprofessionals to whom they might possibly be bewildering.

CHAPTER 11

PRODUCTION SCRIPT OF CHRIST OF THE ANDES WITH ANALYSIS

It is hoped that the following prompt script and analysis (page 260) will prove of value to the student of radio production. It is a copy of the director's script of "Christ of the Andes," which was heard over the Columbia Network, Dec. 20, 1937, as the eighth of a series of broadcasts entitled Brave New World. The script, as given, was used in the rehearsal and air show. It is a copy of the entire script, showing the parts that were cut out and the reasons for the cuts. It shows all cues for cast, sound effects, and orchestra. An analysis of the prompt script follows, numbers in the analysis referring to the numbered speeches, sound effects, and musical cues. It sets forth a clearly defined picture of the script and cue mechanics that are employed to see a broadcast through the air.

If the same broadcast were to be done again with altered personnel, it is more than likely that it might vary in some respects. No two shows ever repeat in precisely the same way, and, with a different director in the control room hearing the same lines read by different actors, altered values would inevitably be sought, and the mechanical framework and direction of the production would change. As an exercise in production, "Christ of the Andes" offers an interesting and strenuous workout to any group, and it is offered here with that object in mind.

PRODUCTION SCRIPT

U.S. DEPARTMENT OF INTERIOR—PAN-AMERICAN SERIES

CHRIST OF THE ANDES

Monday, Dec. 20, 1937
10:30-11:00 P.M.

Program No. 8

CUE

1 [Cue]* MUSIC: *Heroic . . . stirring . . .* ← Short theme

2 VOICE

[Cue] Brave New World!

3 [Cue] MUSIC: *Up and under.* ← Theme

VOICE

[Cue] Open the book of Latin-America! Let the pages come alive with saints and sinners, ~~beggars and kings, tyrants and rebels,~~ scholars and adventurers, ~~blood and tears, laughter and comedy!~~ The chronicle of countries from the Rio Grande to the Straits of Magellan—twenty nations with a history and a culture to be admired and a democratic ideal we share! We, the people of the United States, have common hopes and common dreams with our southern neighbors! The Office of Education and the Columbia Broadcasting ~~System~~ **[Network]** present the eighth chapter of this mighty book of a brave New World—Latin-America!

5 MUSIC: *Up and out.* ←

6 PAUSE:

7 VOICE

[Cue] (*Very quietly and confidentially, as though to the listening audience*) Do you hear us?

8 2ND VOICE

(*In the same tone*) We have come to tell a story.

* Words set in **boldface** type are notations interpolated by the director.

9 VOICE

The story of the "Christ of the Andes."

10 2ND VOICE

We believe that all of you will want to hear it.

11 VOICE

(*To his companion*) But there are some who cannot hear us.

12 2ND VOICE

Where?

13 VOICE

(*To his companion*) Look . . . in that little home . . . that husband and wife cannot hear us . . .

14 2ND VOICE

I do not see them.

15 VOICE

Look closer. . . . That young couple in their white home, trimming their Christmas tree . . . let us try to reach them! *You* speak to them.

16 2ND VOICE

Very well. (*To the young couple*) Young wife . . . young husband . . . listen to our story!

PAUSE:

(*To his companion*) They cannot hear me *You* speak to them.

17 VOICE

Young wife, standing by the window, listen to our story!

18 2ND VOICE

She cannot hear us . . . nor can her husband. . . . His fingers are busy with a blue glass star. . . .

- 19 VOICE ①*
But we can hear them. . . . ← Cue sneak music
- 20 2ND VOICE.
(*Quietly, to the listening audience*) Let us listen to what they are saying.
- 21 MUSIC: *Identifiable theme to be used with every husband-and-wife scene.*
- 22 SOUND: [Cue] *Sleigh bells very distant.*
- 23 WIFE
[Cue] Look . . . look, John, it's snowing! And listen! Sleigh bells!
- 24 HUSBAND
You and our child . . . holiday time . . . ~~snow~~
~~outside~~ . . . a fire in the grate . . . what man can ask for more?
- 25 WIFE
(*Dully*) Yes, John.
- 26 HUSBAND
Why are you so quiet?
- 27 WIFE
Come here. . . . Take my hand. . . .
- 28 HUSBAND
You're trembling from the cold!
- 29 WIFE
No . . . no, darling . . . I'm afraid. ← Cue music out
- 30 HUSBAND
Afraid? Of what?
- 31 WIFE
By next Christmas our child and I may be alone. . . . Everything will be as it is now . . . the snow

* Number in circle refers to first in numbered sequence of orchestral cues.

. . . the sleigh bells. . . This room will be warm
. . . but you will not be here.

32 HUSBAND

I'll always be wherever you and our child are.

33 WIFE

Next year you may be lying in a field . . . a bayonet
in your throat.

34 HUSBAND

(*Laughing*) Is that the holiday spirit . . . to think of
war. . . .

35 WIFE

Turn on the radio. . . . Music is what I need . . .
carols from the church . . . anything to rid myself
of this feeling I have. . . . People talk about holiday
spirit . . .

Cue: sound
radio button
click

36 HUSBAND

Presto! . . . you shall have music!

37 PAUSE:

38 RADIO

[Cue] Flashes of the latest news! (*Note: Insert on
date of production the name of the latest town or city in
the Spanish war to fall*) **Teruel**. . . As thousands
of refugees fled the Spanish border tonight a battle
raged . . .

39 WIFE

[Cue] Change that!

40 RADIO

. . . on the eastern flank, and twelve hundred men
were killed when . . .

41 HUSBAND

[Cue] I'll tune it out. . . .

42 PAUSE:

43

RADIO

[Cue] (*A hymn is tuned in. . . . It is "Heilige Nacht" . . . beautiful . . . peaceful . . . sung in English*)

(2)
Music of singing voices continues 10 sec.

44

WIFE

[Cue against music] Ah . . . lovely . . . so lovely. Cut music

45

RADIO

(*Suddenly*) [Cue] We interrupt this program to bring you a special news bulletin! . . . (*Note: Fill in on date of production latest city in the Sino-Japanese war to fall*) As . . . Tsin Chow . . . was aflame, planes swept over the city dropping bombs and as the fires raged in many parts of the city, newspaper observers noted that casualties reached a staggering total. . . .

46

WIFE

(*Crying out*) [Cue] Turn it off! Turn it off!

47

HUSBAND

[Cue]
I'll try this station. . . .

48

RADIO

(*A very unctuous voice*) ~~Peace~~ [Cue] on earth, good will to men! It is fitting that in this season of the year, when men's hearts are turned toward inner things . . .

49

WIFE

[Cue] Turn it off!

50

SOUND: [Cue] *The click of the radio turned off. . . . Then absolute silence.*
Even the air is full of horror. . . .

(3)
Cue
Music—forte

51 ~~Music: Out.~~

52

2ND VOICE

[Cue] (*To the listening Audience*) Let them turn off the radio. . . . It does not matter.

53

VOICE

It does not matter. Pick up a newspaper.

54

2ND VOICE

The black print also tells of war.

55

VOICE

Sit in the comforting darkness of a movie theatre.
 . . . Let the camera throw upon the screen the
 memory of a bayonet charge. . . .

56

2ND VOICE

No one can hide from actuality. . . .

④

Cue music

57

VOICE

Listen. The wife is talking. . . .

58

MUSIC: *Identifying theme.*

59

WIFE

[Cue] If there were something we could do to stop
 war.

60

HUSBAND

Come, darling. Dress up, and we'll go visiting
 neighbors.

61

WIFE

~~This mood~~ . . . How could I, in this mood . . . ?

62

HUSBAND

I'll laugh at you until your mood is over

63

~~Music: Out.~~

Music con-
 tinues behind

64

VOICE

[Cue] Laughing at an unseen fear is no defense.

65

2ND VOICE

Young husband, your wife is right.

66

VOICE

Your wife is right. This Christmas is no proof that peace may last within your room. . . . Her fears are justified. . . .

67

2ND VOICE

But fear should lead to action.

68 ~~MUSIC: Under.~~

69

HUSBAND

[Cue] I will not discuss war with you, my darling. There are other topics . . . a book . . . or let's put some silver trimming on the tree. . . .

70 ~~MUSIC: Out.~~

71

VOICE

[Cue] Let them spend their Christmas Eve adding more silver to the tree. . . . There will be hidden fears within her . . . and he will know but keep his knowledge cloaked in merriment. . . .

72

2ND VOICE

And all the time, high on a peak of the Andes, the snow falls gently on the figure of a Christ.

73

VOICE

← Fade music out

[Cold] The Christ of the Andes.

74

2ND VOICE

Our story.

75

VOICE

Time slips through our fingers like dust. ~~Let us hurry.~~

76

2ND VOICE

We begin our story.

77 VOICE

But the young wife cannot hear us, and if she could, she would not remember when it happened. She was not born yet.

78 2ND VOICE

(*To the listening audience*) But the others . . .

79 VOICE

Yes, you others . . . listening . . .

80 2ND VOICE

Do you remember 1900? Thirty-seven ~~little~~ years ago?

81 VOICE

1900 . . . in Argentina . . . in Chile . . .

82 2ND VOICE

Two countries . . . once friends and neighbors . . .

83 VOICE

Now the chill of war made the people of these nations shiver. . . .

84 2ND VOICE

Frightened.

85 VOICE

In Argentina and Chile.

86 2ND VOICE

Listen to the war machines of Chile and the Argentine. Generals and their staff discuss a boundary problem . . . like animated puppets pulled by strings. . . . Both in Argentine and in Chile . . . far across the Andes . . . like puppets of the devil god . . . war.

⑤ Sneak music in

87 SOUND: *Faintly . . . the call of assembly on a bugle . . . throughout. . . .*

88 SOUND: *Synchronous with the bugle call . . . the distant rhythmic rat-tat-tat of snare drums.*

89 NOTE: *(The general and his staff speak like puppets in a sharp, clipped, artificial rhythm. Both the bugle and drum increase in speed with the speeches)*

90 GENERAL

[Cue] Colonel, What is more important than a boundary?

91 COLONEL

A boundary, General, tells a nation how much gold she owns!

92 MAJOR

How much land she owns!

Music continues behind

93 CAPTAIN

Our interpretation of this boundary is correct.

94 MAJOR

Despite objections.

95 COLONEL

Objections on this boundary can be settled . . . in our way.

96 GENERAL

As your General, I called you men together for that purpose. There is talk of arbitration.

97 ~~SOUND: Loud, shrill laughter.~~

98 MAJOR

Arbitration!

99 COLONEL

~~Ha! Ha! Ha! Ha! Ha!~~

100	GENERAL	Music continues behind
	Quiet! QUIET!	
101	MAJOR	
	Sorry, General.	
102	COLONEL	
	Sorry, General.	
103	GENERAL	
	This means war!	
104	SOUND: <i>The men together exclaim: "Ah! . . ."</i>	
105	GENERAL	
	Eighty thousand square miles of land. Our land. We will win by force. I want specific answers. How many trained reserves have we?	
106	COLONEL	
	Two hundred thousand, General.	
107	GENERAL	
	Light cannon, Major?	
108	MAJOR	
	Up to the quota.	
109	GENERAL	Music continues
	Fine. Heavy artillery, Colonel?	
110	COLONEL	
	Ready for action.	
111	GENERAL	
	Call the navy. Ask about the battleships.	

- 112 COLONEL
We know. Two new ships. Gigantic. Invincible.
- 113 GENERAL
Then we're ready.
- 114 TOGETHER
Yes, General.
- 115 GENERAL
Nothing is so important as a boundary. Capture 80,000 square miles of land, or know the reason why!
- 116 MAJOR
Time for lunch, General. . . .
- 117 GENERAL
Food! I'm starved! . . . ← Music up
- 118 ~~SOUND: Bugle and drum increase speed but not volume until the rhythm synchronizes with the rhythm of the~~
- 119 MUSIC: Up and out.
- 120 VOICE ← Music out
[Cue] Eighty thousand square miles between Chile and the Argentine.
- 121 2ND VOICE
Mountains with minerals hidden in their bosom.
- 122 VOICE
The Andes, gigantic ~~backbone~~ mountain, cutting through Chile and the Argentine. The question: Where does one nation end and another begin?
- 123 2ND VOICE
How many miles of Andes belong to Chile? To Argentina?
- 124 VOICE
So wars begin . . . ~~for land or gold or iron.~~

125 2ND VOICE
 (To his companion) Wait! . . . The wife is smiling
 . . . does she hear us?

126 VOICE
 No. But listen to her.

127 MUSIC: *Under*.

128 WIFE
 John . . . if the hopes of people of a nation flowed
 together in a common dream . . . to end war . . .
 could it not be done? John . . . could it not be
 done?

129 HUSBAND
 Er . . . what? I dozed off. I was nodding. What?

130 WIFE
 Nothing, John. Go on and sleep . . . The fire
 makes one drowsy. . . .

131 MUSIC: *Out*.

132 VOICE
 (To the young couple) Yes, sleep, John. Sleep.
 Sleep brings forgetfulness.

133 2ND VOICE
 Our story . . .

134 VOICE

And so the generals planned for war. In Argentina
 a president sat in his office and stared at an official
 document. His smug aide knew all the answers.
 . . . The President of Argentina stared at . . .

135 ~~2ND VOICE~~
 An ultimatum from Chile ~~demanding~~

136 . AIDE

[Cue] Your Excellency, this ultimatum.

137

ROCA

I agree with it.

138

AIDE

Accept Chile's demands to arbitrate?

139

ROCA

Why not?

140

AIDE

Your Excellency, Argentina's pride!

141

ROCA

The people of both nations do not want war.

142

AIDE

The people's hands are always tied.

143

ROCA

Their lips are not sealed.

144

AIDE

We will have war.

145

ROCA

~~No!~~

146

AIDE

Within a few weeks, Your Excellency, in both Chile and Argentina, crowds will cheer the bands playing in the streets, and flags will wave.

147

ROCA

~~No!~~

148

AIDE

The people of Chile will be told what monsters the Argentineans are. The people of the Argentine will read the stories of atrocities committed by the Chileans. And blood will flow like water from a faucet!

149 Roca

Never while I am President!

150 AIDE

What can you do? The war machine is oiled. . . .
The gear teeth slip easily in the grooves. . . . Noise-
lessly . . . not a hum. . . . The war machine is
greased and polished! . . .

151 Roca

~~No! No!~~ We will arbitrate!

152 AIDE

Not so long as men's hearts leap at the sound of a
drum!

153 PAUSE:

154 VOICE

(*To the listening audience*) This is a story of peace.

155 2ND VOICE

This has a happy ending.

156 VOICE

In Argentina and Chile women sat singing the same
lullaby to their children. In Argentina and Chile the
Presidents sleep restlessly. . . .

157 2ND VOICE

And Easter Sunday came.

158 VOICE

There was a Bishop Benevente of Argentina. Let us
never forget him.

159 2ND VOICE

Generals and colonels are forgotten, but not the
words of that holy man.

160

VOICE

(*To the couple*) Young wife, let your husband sleep.
 . . . Try to hear us . . . to hear the words of the
 Bishop as he spoke from the pulpit that Easter Sun-
 day in Buenos Aires. . . .

161

2ND VOICE

The words of Bishop Benevente. ←

162

~~MUSIC: Up and under.~~

⑥
 Cue: Bene-
 vente music
 and hold behind
 the following.
 Pianissimo

163

BISHOP

[Cue] Today we celebrate that morning when Mary
 Magdalen and the other Mary came to the sepulcher
 and found the stone had rolled away and that Jesus
 of Nazareth had risen ~~and reached up~~ into Heaven.
 . . . On such a day as this the words of the Prince of
 Peace should be engraved on the hearts of everyone.
 Man should turn to man as his brother, forgetting
 race and creed and color. Crush all thoughts of war!
 Let us stop it! Do not permit the fine young man-
 hood of any nation to be wiped out! I cry peace!
 Christ is our Saviour, and in his words lies the salva-
 tion of our civilization. Remember this day and
 make our deed worthy of Him who died so that we
 might be saved! Cannot the day come when a
 statue of Christ the Redeemer be placed on a peak of
 the Andes where, from its great height, the people of
 Argentine and Chile can see Him and remember His
 preachment and turn away from thoughts of war!

164 ~~MUSIC: Up and out.~~

Cue: Music up
 full

165

VOICE

[Cue] While, like a clashing theme, played against
 the symphony of peace, the puppets of the war
 machine . . .

166

~~A metronome throughout~~

167

GENERAL

We need more guns, Colonel!

168

COLONEL

More guns, General.

169

GENERAL

The time is ripe! We need more men, Major.

170

MAJOR

More men!

171

POLITICIAN [Modified echo]

[Cue] Fellow constituents, it is sad that I am past the age when I can serve my country's cause. But I am sure that the young men of our nation will take up arms to assure the safety of our boundaries forever.

...

[Fade slightly]

172

SHIP CAPTAIN

First mate, speed the boat! These munitions must reach Chile!

173

2ND SHIP CAPTAIN

First mate, speed the boat! These munitions must reach Argentina!

174

DEMAGOGUE

[Cue on "Boundaries" in #171] I'll speak to the people! [Cue #172] I'll tell them they must be ready to protect their honor! [Cue #173] I'll show them pictures! Write them music! Write them stories! But get the people aroused!

⑦

Cue: Music

175

MUSIC: *Up and out.*

176

VOICE

[Cue] But people listened to their bishops.

177

2ND VOICE

Listened to their women!

178

VOICE

This happened in Argentina, in Chile! Women spoke! Women joined hands, stood side by side in war against war!

179

2ND VOICE

(To his companion) Wait! . . . Look in the white home of the young couple. . . . The door is opening in the room. . . .

180

VOICE

Young wife, your child has awakened!

181

2ND VOICE

Husband, here is your child!

182

VOICE

Let us listen.

183 MUSIC: *Under.*

184

WIFE

Billy, to bed this instant!

185

CHILD

Is Santa Claus come yet? Is Daddy waiting for Santa Claus? . . . Is . . .

186

WIFE

Sh-h-h . . . Daddy's sleeping. . . . It isn't time for Santa Claus.

187

CHILD

But I want to see Santa Claus. . . .

188

WIFE

Soon all the nice things Santa Claus brought you will be under the tree.

189

CHILD

I want a train. . . . I want lead soldiers. . . . Will Santa Claus bring me lead soldiers . . . ?

190 WIFE
Come, Billy . . . back to bed. . . . Come, take mother's hand. . . . Come . . . I'll sing you to sleep.

191 Music: *Out.*

192 VOICE
Lead soldiers.

193 2ND VOICE
Young mother, feeling a great fear in your heart as you tuck your child safely in bed! Young husband, sleeping so peacefully in your armchair! So did the young wives and husbands in Chile and Argentina until the day come when they spoke out against the fear that clutched them!

194 VOICE
One bishop spoke. Then another. Then the women joined forces.

195 2ND VOICE
Women spoke in clubs. All over Argentina and Chile the women threw convention to the winds and spoke. . . .

196 ~~Music: *Up and under.*~~

197 WOMAN
[Cue] The boundary line between our two countries? That is the question driving us to war! But war between these nations is impossible! Not so long ago Argentina and Chile fought for independence! Their soldiers fell to free us from Spain. From Argentina up to Chile came the great San Martin, and side by side the two armies fought. And today we are being told that we should war against each other! No!

198 MAN
My dear Señora . . .

199

WOMAN

Señor?

200

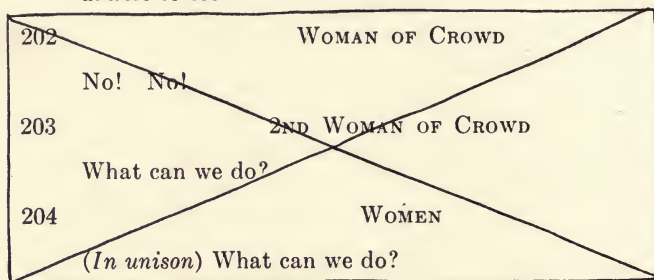
MAN

Might I suggest that you return to your embroidery?
(Laughter) What concern is it of yours what we men
 choose to do!

201

WOMAN

What concern? We women have known the ecstasy
 and pain of bringing sons into the world! We fed
 them, watched them grow to manhood . . . and we
 will not have them destroyed! You women, do you
 wish to see your men unable to work, unable to walk,
 unable to see!



205

WOMAN

~~What can we do!~~ We must Petition our Congress!
 Let them know the feelings in our breast! Plead for
 arbitration! Arbitration is the answer! War is
~~futile! useless!~~ Eighty thousand square miles of
 land is not worth the stilling of any young man's
 heart! Remember the word . . . arbitration!

206

WOMAN

~~(In unison) Arbitration is the word! Remember!~~
~~Remember!~~



207

WOMAN

Never forget it! And if you remember it strongly (8)
 enough, this war will not come to pass! ← Music

208 Music: *Up and out.*

- 209 VOICE
Young wife, if you could only hear us! You would understand our story. Music continues behind
- 210 2ND VOICE
The mothers of the world have a voice greater than that of cannon! That is our story. Music out
- 211 VOICE
So the bishops talked. The women pleaded. Petitions were sent.
- 212 2ND VOICE
Petitions grew and reached executives. And the well-greased war machine began to creak. . . ⑨ Sneak music in
- 213 VOICE
It needed oiling. . . .
- 214 SOUND: *Same bugle and drum effect as before.*
- 215 NOTE: *Same speech effect as before.* Hold behind
- 216 GENERAL
[Cue] Propaganda! Teach the people the glory of war!
- 217 MAJOR
Sorry, General. They won't listen!
- 218 COLONEL
People are stubborn.
- 219 CAPTAIN
Mules.
- 220 GENERAL
But we're losing out! They talk of arbitration! Hold music behind
- 221 COLONEL
Heresy!

- 222 GENERAL
Arbitration! Whoever won a patch of land through arbitration? Steel! Bullets!
- 223 COLONEL
We must get the people. Make them angry! Faces white with national pride!
- 224 GENERAL
Blow the trumpets, bang the brasses! Quick . . . no time to lose!  Music up
- 225 SOUND: *Same effect of bugle and drum as before, leading to*
- 226 MUSIC: *Up and out.* Music down
- 227 VOICE
[Cue] Too late . . . the people have beaten them. Arbitration will solve this question. Out
- 228 2ND VOICE
Time had passed since Bishop Benevente spoke on Easter Day. . . .
- 229 VOICE
1900 . . . 1901 . . . 1902 . . . 1903. The two nations sign a treaty agreeing to arbitration. The King of England, Edward the Seventh, arbitrated the question. . . .
- 230 2ND VOICE
Hours the good king spent with his jurists, his geographers, dividing land to each . . . and the two countries . . . accept . . . cheerfully.  Sneak music in (10)
- 231 VOICE
And the day came in June, 1903 . . . when diplomats from Chile and from Argentina met in peace!
- 232 MUSIC: *Up and under.* Up slightly, then down behind

233

DIPLOMAT

[Cue] Sign here, Your Excellency. . . .

234

PRESIDENT

Let me read these words. . . . They are words I do not want any man ever to forget. . . . (*Reads*) "Both nations agree to submit to arbitration all questions of whatever nature which from whatever cause may arise between them in so far as they do not affect the provisions of the constitution of the one or the other country. . . ." I have never signed my name to anything which brings me such happiness as this.

235

DIPLOMAT

Now read this and sign. . . .

236

PRESIDENT

Music behind

(*Reading*) "The Governments of Argentina and Chile desist from acquiring the vessels of war which they have in construction and from henceforth are making no new acquisitions. Both governments agree, moreover, to reduce their respective fleets. . . ." Thank God that I am alive to see such a day. . . . Here is my signature. ←

Up

237 Music: *Up and out.*

238

VOICE

[Cue] Celebrate, people of Chile, people of Argentina! Sing! Be glad!

Out

239 ~~SOUND: Sneak under the singing of merry crowds.~~

240

2ND VOICE

Commemorate this day of disarmament. This is a lesson to the world!

241 ~~SOUND: Singing up and out.~~

(11)
Sneak Bene-
vente music in

242

VOICE

And peace like gentle snow fell on the two nations . . . and people remembered those words of the Bishop on Easter Sunday. . . . ←

243 MUSIC: *Sneak under.*

244 BISHOP

Cannot the day come when a statue of Christ the Redeemer be placed on a peak of the Andes, where, from its great height, the people of Argentina and Chile can see Him and remember his preachment and turn away from thoughts of war?

245 MUSIC: *Up and under.*

246 SOUND: *A murmur of excitement in a crowd.*

247 MAN

[Cue] Peace! peace! Let us show our gratitude!

248 WOMAN

Let us cast a statue of Christ and place it on the boundary line! Christ the peacemaker!

Music up followed by cross-fade in of crowd ad lib

Hold slight ad lib behind to here

249 MAN

Who are you, Señora, who suggests this to us?

250 WOMAN

Señora de Costa.

251 2ND MAN

Señora de Costa, we need money to buy such a statue!

252 WOMAN

Money . . . we women will raise it!

253 MAN

Señora de Costa, who will carve the statue?

254 WOMAN

I will find the artist.

255 2ND MAN

Where will you place it?

256 WOMAN

High on the Andes.

257

MAN

I join you!

258

2ND MAN

And I! ←

259

2ND WOMAN

A Christ of the Andes! ←

Ad lib crowd
in and cross-
fade out with
music here

(12)

260

WOMAN

~~Come. . . . We have work to do!~~

261

~~Music: Up and out.~~

262

VOICE

[Cue] Angela de Costa . . .

Hold behind

263

2ND VOICE

Woman of vision . . .

264

VOICE

She is going from friend to friend . . . asking for
money!

265

2ND VOICE

Speaking to sculptors!

Out

266

VOICE

It will take her a long while . . . !

267

2ND VOICE

Leave her to her work.

268

VOICE

See, now, in the white home, the young husband is
awakening. . . . He looks for his wife. . . . He sees
she has gone back to the bedroom with their child.
. . . . He smiles. . . . Now he hurries to a drawer
. . . . pulls out a box. . . . What pride of father-
hood! There! . . . Open the box, young husband!

269

2ND VOICE

No . . . no. . . . you must not give your child such a gift!

270

VOICE

Lead soldiers . . .

271

2ND VOICE

We tell the story of peace . . . of a bishop speaking . . . of women slaying the dragon of war . . . of a king arbitrating . . . of treaties signed in the spirit of peace . . . of Señora de Costa hurrying to build a memorial to peace. . . .

272

VOICE

Shut the box of lead soldiers, young husband!

273

2ND VOICE

(*To his companion*) It is no use. He does not hear us.

274

VOICE

But the others hear us. . . .

275

2ND VOICE

Yes. (*To the listening audience*) All of you . . . you hear us. . . .

276

VOICE

Return to 1903.

277

2ND VOICE

Whose studio is that?

278

VOICE

Señora de Costa stands beside a young man. . . .

279

2ND VOICE

Is he the sculptor?

280

VOICE

Yes. Matee Alonso.

- 281 2ND VOICE
He will not be forgotten.
- 282 VOICE
There is the statue finished, waiting to be cast in bronze.
- 283 2ND VOICE
Christ of the Andes, holding your cross, your other hand uplifted in a blessing on the world!
- 284 VOICE
. . . Señora de Costa is speaking. . . .
- 285 ~~MUSIC: Up and under.~~
- 286 WOMAN
It is beautiful, Alonso.
- 287 ALONSO
Thank you, Señora. . . .
- 288 WOMAN
Now the peoples of Argentina and Chile will remember His words.
- 289 ALONSO
My statue, Señora, is very gigantic . . . but it is simple.
- 290 WOMAN
Yes. We must quickly cast your statue. . . .
- 291 ALONSO
Where will we find enough metal for such a gigantic statue?
- 292 WOMAN
Leave that to me, my friend!
- 293 ALONSO
You know where to find so much metal?

294 WOMAN

The arsenal at Buenos Aires.

295 ALONSO

Munitions!

296 WOMAN

Yes! . . . Metal which was to be used for death we shall use to commemorate life!

297 ALONSO

Pour the liquid metal into my shape of Christ!

298 WOMAN

For all to see!

299 ALONSO

I feel very humble. . . . What artist has ever attained such purpose!

300 WOMAN

Come, Alonso. . . . Until the world can see your statue high on the Andes I shall not rest. ~~Come, there is work to be done!~~

301 ~~MUSIC: Up . . . under.~~

302 VOICE

[Cue] How hot it is in here.

303 ~~2ND VOICE~~

This is the casting room. Listen to the men at work.

304 CASTER

[Cue] This was a cannon to be used in a war. Throw it in! Throw it in!

305 2ND CASTER

This was a howitzer ready for war. Melt it and form it into His foot!

⑬

Music up, then down and cross-fade in factory sounds. Hold behind

306 3RD CASTER

This was a gun designed to destroy. Destroy it forever here in this fire! Melt it and pour it into this mold!

307 4TH CASTER

~~Into the foot! Into the cross!~~

308 5TH CASTER

We are the molders, the shapers! We are the people who die on the field! We are humanity! Lift up those cannons! Into the fire! Gone with a sizz and a flame! Melt them and form them into His robes! ~~Into His crown of thorns!~~ Out of the chaos come order and life; out of these cannons comes Christ of the Andes! ←

Music in as
bridge. Cross-
fade sound out

309 MUSIC: *Up and out.*

310 VOICE

[Cue] The statue is cast.

311 2ND VOICE

Ready for placement.

312 VOICE

High on a pass on the Andean border!

313 2ND VOICE

How shall they bring this gigantic memorial up from the city, over the plains, up the sides of the Andes, to rest on the boundary where snow eternally lies?

314 ~~MUSIC: Sneak under~~

315 VOICE

First by rails . . . from Buenos Aires to Mendoza.
. . .

316 ~~SOUND: The clickety clack of wheels on railroad.~~

317 RAILS

(In unison) Faster . . . faster . . . **ever** faster . . .
~~faster . . .~~

318

VOICE

Then by rope up the mountains . . .

319	Careful!	MAN
320	Careful!	2ND MAN
321	The rope is breaking!	3RD MAN
322	Hold it!	MAN
323	A burro is slipping!	2ND MAN
324	A burro has fallen!	3RD MAN
325	But the statue is safe!	MAN
326	(Calling) Men . . . the statue is safe!	2ND MAN

327

MEN

(In Unison) ~~Climb . . . higher . . . higher . . .~~
~~higher!~~ Climbing higher . . . ever higher.

328 SOUND: *Sneak in wind.*

Fade in wind
on cue to
sound

329

VOICE

Five thousand feet . . . eight thousand feet. . .
 The snow grows thicker. . . The wind is piercing.
 . . . Higher . . . higher . . .

330 SOUND: *Wind up and into* [cross-fade]

(14)
Wind up, then
cross-fade
wind on cue to
music bridge

331 MUSIC: *Serene* . . .

332

ALONSO

[Cue] Señora de Costa!

333

WOMAN

Alonso!

334 ALONSO

Soon the ceremonies will start. Before they do, look at the statue well and tell me I have not failed.

335 WOMAN

It is sublime, Alonso.

336 ALONSO

The sun breaks through a cloud! It falls on the cross!

Sound cue:
sneak in canon
off mike

337 ~~SOUND: *Music in the distance . . .*
The band is coming.~~

338 SOUND: *Booming of cannon . . .*
Listen to the cannon! They speak their own requiem. They are cannon of peace!

339 ~~SOUND: *Booming of cannon . . . silence . . .*~~

340 ~~SOUND: *The mumble of the crowd grows.*~~

341 ALONSO

Ceremonies are beginning. . . . ~~Thank Thee, O God!~~

342 WOMAN

Thank Thee, O God, for this hour. . . .

343 SOUND: *The crowd is silent.*

344 BISHOP

People of Argentina and Chile . . . ~~let us sing the national anthems of our countries.~~

345 ~~MUSIC: *The chorus sings the Argentine national anthem . . . then is faded into conclusion of Chilean anthem.*~~

346 ALONSO

Señora, the Bishop speaks!

347 BISHOP

When future generations rise to these heights, carried in the arms of steam, they shall not find, as at Thermopylae, written in blood on the naked stones

that testament of the heroic Spartans: Here we gave our lives to defend the laws of the fatherland. Rather, they shall arrive at this summit, and in the metal of this glorious moment they shall see in letters of fire a sublime legend: Sooner shall these mountains crumble into dust than Argentineans and Chileans break the peace sworn to at the feet of Christ the Redeemer . . .

(15)

Bishop
Benevente
theme music.

348 Music: *Up and out.*

349 VOICE

(*To the listening audience*) There is our story.

350 2ND VOICE

The Christ of the Andes.

351 VOICE

Remember it well. . . . Tell it to others . . . ~~all of you . . . listening.~~

Hold behind

352 2ND VOICE

Each of you . . . listening . . . do you know this young wife singing to her child? Do you know this young husband, bright with his pride of fatherhood? They cannot hear us! Perhaps you know them.

353 VOICE

Tell them of the Christ of the Andes. . . !

354 2ND VOICE

Tell her what women can do when fear for their loved ones is strong.

Hold behind

355 VOICE

Tell him to close the box of lead soldiers. . . .

356 2ND VOICE

Christ of the Andes cast from the cannon. . . .

357 VOICE

Peace . . . peace . . .

Music to
cadence

358 2ND VOICE

[Cold] Our story . . . is finished.

Short theme

359 Music: *Up and out.*

360 ANNOUNCER

[Bracketed portion cold on cue] [The eighth chapter in the book of Latin-America is ended! Next week when we meet again the ninth chapter will be told.]

Conquering Spaniards build a New World in South America. But by 1825 these colonies have freed themselves from Spain. . . . But how shall they govern themselves? In Argentina, dictators seize the reins of government. But one man in Argentina wishes to bring the vision of democracy to this newly freed country. He dreams of the day when . . . but that is our next chapter. Next week at this same hour, on this same station, the Office of Education and the Columbia Broadcasting Network will present the revolt against dictatorship and the dawn of democracy in Argentina.

Theme behind

361 Music: *Up and under*

Theme up,
then down

362 *Special announcement.*

[Cue] Here is a special announcement of interest to everyone who wants to know more about our Latin-American friends. . . . Would you like to receive a free publication, giving many facts about the people of South America, their land, and their history? Everyone should have this information about our neighbors to the south. Just send your name and address to Brave New World . . . Washington, D. C., and this material will be sent to you at once. Let me repeat . . . if you want this free publication containing facts about the people of South America, their land, and their history . . . just send your name and address . . . a postcard will do . . . to Brave New World, Washington, D. C.

Behind

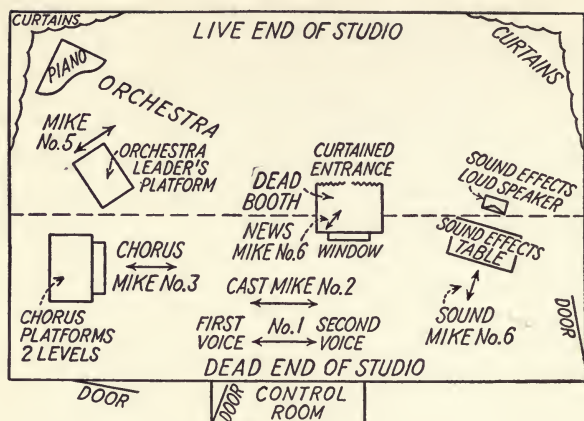
363 Music: *Up and out.*

Theme up
then down
behind

364 ANNOUNCER

[Cue] The Brave New World script: Bernard C. Schoenfeld, . . . music direction, Victor Bay . . . music composition, Rudolph Schramm . . . Earle McGill directed. This is the Columbia . . . Broadcasting System.

Here. Then
cut music



ANALYSIS OF PRODUCTION SCRIPT

"Christ of the Andes," like all productions on the series entitled *Brave New World*, employed an orchestra of eighteen pieces and a chorus of sixteen voices. All the music was written specially for it by Rudolph Schramm. The opening and closing theme was standard for all broadcasts in the series, and, like most of the cues, was heroic in character and feeling.

The show opened with a few bars of theme, followed by the announcer reading cold the title of the series with as much lift, clarity, and drive as he could summon to the projection of speech 2. The very instant he finished the word "World," the orchestra and chorus came in full with the theme. At the end of eight bars, both chorus and orchestra dropped down behind speech 4, the chorus substituting a humming of the melody for the words. (Carrying lyrics behind speeches should be avoided when possible, for the words of a song are then said to "fight" with words of the speeches.) All of speech 4 was so timed that it would finish just before the last four bars of the theme, enabling the singers to revert to the lyrics of the theme without being forced to hum those bars. Cuts were made in the speech to avoid too long a category in lines 2, 3, and 4.

All six microphones used on the broadcast were velocity microphones of the type 44. The First Voice and the Second Voice were read throughout the broadcast, close and across beam on a separate microphone (1), to give them a quality of intimacy, to project them so that they would seem to be with the listener

rather than a part of the broadcast. They were directed to speak simply, objectively, compassionately, in the hope that they would seem to be two disembodied voices. Note that the music was sneaked in at the conclusion of speech 19 rather than at the end of speech 20, as indicated by the writer. Music "sneaked in" in anticipation of a need is held in readiness, so to speak. It is heard, but it has no special accent. Suddenly the listener is upon the moment when the music enhances what is being said, and he accepts it as part of the general idea and mood picture that are created for him. For music to come in upon the very instant when it is needed is to say, in effect, "Here is the music. See how it is going to add to this scene." It is all too pat, too glib, and the machinery of production is too obvious. When the props and tricks and devices of production are obvious they are of little value and should be rejected. The sound pattern 22 was held down to the barest suggestion of sleigh bells for two reasons: first, because "Christ of the Andes" was a highly stylized production, and as far as possible bald and literal effects had to be avoided if the artistic purposes of the script were to be realized; second, because the script seemed in several places to be a play within a play within a play, somewhat analogous to those little Chinese dolls that, when opened, reveal another smaller doll that, in turn, conceals another, and so on, with graceful Oriental prolixity until there seems no end to the process. The use of highly realistic effects might have taken something away from the allegorical quality of the story.

Speech 24 was transposed slightly. Putting the phrase "holiday time" first rivets the season more closely to the little scene. "Snow outside" is one of those little phrases, not quite a solecism, that look all right on paper but that have a heavier impact when they are spoken. Good writers always like to be saved from such words.

Changing speech 26 from "Why are you so quiet?" to "Why have you been so quiet?" heightens the impression we get of the wife's mood by suggesting that it existed before the scene opened. The music was taken out at the end of speech 29 because its function had ended. The mood had been set and enhanced by it, and there was no further need of it in this part of the scene.

The most difficult part of the whole production started on speech 35. Suddenly the scene called for intensely realistic

production, the picture of a broadcast within a broadcast. The moment the wife said, "Turn on the radio," everything had to simulate perfectly a radio playing, because every listener knew expertly how a radio should sound and would have known immediately if the reproduction was not a faithful one. As written, the husband said, "Presto . . . you shall have music," and somewhere in the line, presumably, he turns on the radio. Then the author called for a pause in speech 37. Since we are committed now to a sharply realistic effect we have to follow through, and, even allowing for stage license, any radio listener knows that you cannot get a radio to start in much under 10 seconds. Obviously we could not wait that long for the opening of speech 38. The solution to the timing problem in such a scene lies in so dovetailing lines and cues that the illusion will be perfectly established, and, where necessary, in filling out lines for additional playing time. The sequence of line and cue and additional written-in line will then run as follows:

35 Turn on the radio . . .

36 Presto! . . . you shall have music!

CUE SOUND: *Radio button click.*

(Now back to cue 35)

. . . music is what I need . . . carols from the church . . .
anything to rid myself of this feeling I have. . . . People talk
about holiday spirit . . .

And somewhere before she gets to the finish of this written-in speech, the radio announcer on mike 6 is cued in, speech 38 fades in quickly, and the wife drops out as he reads:

CUE

38 Flashes of the latest news! . . . etc.

In order to give the maximum acoustic control of all the words read on the radio, microphone 6 was set up in a dead booth. In this way nothing read on microphone 6 could spill over and be picked up on any other microphone. In addition, to give a maximum effect of reality and to set off the unreal radio voices from the real, a slightly filtered microphone was employed.

In speech 38 the name of the city Teruel was inserted as the most timely choice at the date of the broadcast.

At the next cue the radio had to be turned off and the song, as called for by cue 43, introduced. By cuing the wife's speech 39 in at the word "tonight" and the husband's speech 41 in at the word "flank" in speech 40, time could be taken to fade the rest of the line slowly, as would be done in fading a radio down. This made a slight pause possible—a pause in which the announcer could get out and two singers could quickly get into the booth and start on cue to sing "Heilige Nacht," which would be faded in and held for several bars.

Line 44 would be read, and presently the song would fade, the singers would get out of the booth quickly, making way for an announcer who would be faded in reading speech 45. In this speech the name of the Chinese city Tsin Chow was filled in.

The news bulletin here had to be extended somewhat to enable its full meaning to reach the wife and also to accent the content more sharply, which, in turn, would give more excuse for a vehement reading of speech 46. The extended portion of the speech reads: ". . . as the fires raged in many parts of the city, newspaper observers noted that casualties reached a staggering total . . . " Extending the line provided excuse to fade down the line, stall for a moment to permit the news announcer to get out of the booth and to fade in the unctuous voice of speech 48. In addition, this extension allowed speech 47 to be read on cue at the word "city."

Speech 48, being too short, not fully conveying the author's meaning and not providing a sufficient number of words to support the climactic speech 49, "Turn it off!" was also extended.

Speech 49 was cued in at the word "hearts." A slight touch was added in cutting out the first word of speech 48 to emphasize the mechanics. By cuing, the extended portion of the speech read: ". . . It is fitting that in this season of the year, when men's hearts are turned toward inner things . . . "

The music cue 50 is of the "sock" variety, heavy, full-bodied, richly dramatic to accent everything that has preceded it and providing a bridge for what follows. Speech 52 is on cue as the bridge is fading out. It should not be necessary to cut off such bridges sharply. The diminuendo should be smooth, and if a few notes spill over into the opening speech of the next scene

so much the better. The music sneaks in at the conclusion of speech 56 and stays behind the next dozen speeches, which dovetail among the husband and wife and two disembodied voices.

Speech 67 was changed from "This mood . . . this mood . . ." because these words had a somewhat Muscovite or "Cherry Orchardish" feeling. Changing it to "How could I, in this mood?" kept it flowing along with what had gone before and tied up better with the line that followed it.

By having the music go out on or just before line 73, the title of the broadcast was highlighted and driven home.

In speech 75, "Let us hurry" was cut because at no other time in the script did the voices say anything again, one way or the other, about hurrying. It was probably an extraneous sentence, a few of which are bound to creep into every script.

In speech 80, the word "little" was out because it is one of those annoying little qualifying words that pop up now and then to distract because they challenge attention. "What is a 'little' year?" the purist might ask, and concession should be made even to purists if the cost is so little.

The next scene, beginning with speech 86 and continuing through speech 118, was highly stylized. Again the music sneaked in. The bugle and drum calls were scored most effectively into the music, heightening the effectiveness of the entire scene. The cast read the lines in sharply clipped, unemotional fashion to accent their automaton character.

Speeches 97 and 99 were cut because mass laughter is a dangerous effect to tinker with. Nothing can sound quite so phony as laughter from a group, and unless it is most meticulously staged it is almost bound to go wrong in performance. Instead the word "arbitration" was played upon—properly so, since arbitration was the central idea behind the entire broadcast.

Speeches 101 and 102 were cut because 99 was cut.

The word "fine" was cut in speech 109 because it destroyed the rhythm of the lines.

On speech 118 the music came up as a bridge, then faded down and went out on line 120.

In speech 122 the word "mountain" was substituted for "backbone" because it is a clearer identifying word for Andes. Some radio listeners are strangely literal-minded.

Speeches beginning with speech 125 up to and including speech 133 were cut because the little scene was an interruption that pointed up nothing and hindered the flow of ideas on which the story by this time had well embarked.

The cut was made in speech 124 to make a smoother blend with speech 134.

Speech 135 blended with speech 134. There was no special point in interrupting the flow of ideas by having a second Voice read it. Also, "demanding" was cut because, grammatically, the participle required an object, and it had none unless the entire subsequent scene could be so construed.

Speeches 145 and 147 were cut to tighten the flow of ideas expressed by the aide and to emphasize Roca's speech 149.

The two "no's" were cut for emphasis in speech 151.

Cue music in speech 162 started pianissimo, continued so through all of speech 163, and came up full and majestically at its conclusion. "Reached up" was changed to "ascended," the traditional word. This cue was so timed that the music reached a cadence in cue 164, enabling the Voice to start "cold" on speech 165.

The metronome was cut out in 166, first because the scene itself was relentlessly metronomic and second because to many ears the metronome can be a distracting, horrible sound.

Speech 171 had a modified echo quality. As the politician started to fade slightly toward the end of his speech, the demagogue of speech 174 overlapped his words. Speech 174 was deliberately slowed down in pace and drive to permit speech 172 to come in quickly on the word "people" and speech 173 to come in quickly on the word "honor."

The music cue 175 came in full on the word "aroused," served as a bridge, and was cut in speech 176.

Speeches 179 through cue 193 were cut because the lines impeded the flow of thought upon which the show by now had embarked and were possibly oversentimental.

Speeches 178 and 194 were "blended," read as one speech.

Music cue 196 was cut because it had no special point or meaning.

Speeches 202, 203, and 204 were undistinguished, and the woman's speech had more pith when delivered as one continuous oration.

In speech 205, "What can we do!" was cut because it tied back with the cut preceding it, and the speech was given a new start with the words, "We must petition our Congress." In the same speech, "futile" was changed to "useless" because "futile" is a flossy-sounding word with little impact in a stirring speech.

Speech 206 would have had difficulty in escaping the stigma of sounding arty if it had been uttered in unison by a group of extras. Unison speeches can make a director's face red very easily if they are not shrewdly prepared for and supported by extremely careful writing. The speech was cut.

Music cue 208 was a sock cue, full-sounding and heroic, to sustain the idea contained in the line and scene that evoked it. It remained behind speeches 209 and 210 because "That is our story" provided a natural place for it to stop.

Again the stylized music began by sneaking in at 212. It kept behind the scene through speech 224. When it came up in volume it formed a bridge and dropped out in speech 227.

The music cue sneaked in again at the conclusion of speech 230, came up as indicated for the purpose of accenting the following scene, and then went under and remained behind the scene until it came up again at the conclusion of speech 236, to fade out completely at the end of speech 238.

The sounds indicated in speeches 239 and 241 were cut. They are the sort of direction that a good author puts into a script, knowing in his heart of hearts that the director will cut them out. The singing of merry crowds, indeed! Such a direction is a fillip that would take a half hour to stage and rehearse, would last 30 seconds, and would necessitate the insertion of three widely different music cues all within the space of four short speeches.

Music sneaked in during speech 242 remained behind speech 244 and came up and out at the conclusion of 244.

As it faded down, the sound of a crowd was cross-faded into it, and, on cue, speech 247 was read.

Speech 258 was filled out and became a general ad lib from everybody to give the end of the scene more body for the title cue in line 259, "Cross-fade crowd; ad lib out with the music."

Line 260, previously the cue for the orchestra, was not robust enough dramatically to finish off the scene. The music remained for a while behind the next scene and was taken out arbitrarily at the conclusion of speech 265.

Cue 285 was cut out because it did not belong there. Señora de Costa was about to speak, and in the next line started to speak. There is no good reason why her speech should have been accompanied by music.

From speech 300, the line, "Come, there is work to be done," was cut, and the previous part of the line was made the cue for the music because it had more dramatic impact, more of the quality of finality commonly associated with a curtain line. Music was brought in at speech 301 and was cross-faded with recorded factory machine sounds.

The lines of the next scene, from speech 302 through speech 308, were read with the beat and accent and rhythm of verse. And the factory sound sounds were held back of the entire scene.

Speeches 302 and 303 were blended to tighten the thought.

Speech 307 was cut because it seemed to break the flow and drive of the verse attack, as did the phrase "into His crown of thorns" in speech 308.

Cue 309 was a music bridge, full, rich, open, sweeping in character. The factory sounds were cross-faded out.

Cue 314 was cut because it would have been an unnecessary interruption. The question had been asked in speech 313, and it was essential that the answer be immediately forthcoming, as it was in speech 315.

The sound in speech 316 could have been put in as well as not. It would have been a suggestive touch.

The wind in speech 328 was retained for that very reason.

Speeches 319 through 326 were cut because the dialogue did not completely fulfill the author's aim. They were obviously framed to convey a sense of the difficulty of the task, but the bit was too much skeletonized; there wasn't enough for actors to bite into. Besides, in this place such lines could do no more than impede the soaring quality that by now characterized the build of the script.

This quality was emphasized by rewriting speech 327 from the command, "Climb . . . higher . . ." etc. to the present participle, "climbing higher . . . ever higher . . ." and cutting one word because it was one word beat too many.

Sound cue 330 cross-faded to music cue 331, which ended the story of the conveying of the statue up the mountain and brought

the listener to a dramatic plateau, so to speak, from which presently he would be carried emotionally even higher.

Sound cue 337, the sound of a band in the distance and the rumbling of the crowd, would possibly have cluttered the story. All that was needed to set the scene was the booming of the cannon in the middle of line 336 in anticipation of line 338. Where sound is definitely referred to in a line, it should always be anticipated as far in advance of the reference as possible to avoid patness.

"Thank Thee, O God," was cut from speech 341 because it was enough to say it once in the succeeding line.

Part of speech 344 and all of speech 345 were cut because the flow of drama could not stand still for the singing of two anthems.

A small cut was made in speech 351 because the words were present in the first few words of speech 352.

The music cue 348 came in full and majestically and continued behind the rest of the scene, coming to a cadence at the end of speech 357 so that speech 358 could be read cold. To do so gave the line an effective simplicity.

The theme came in on cue 359, and the broadcast finished in routine fashion, with closing announcements.

"Christ of the Andes"* was a spectacularly successful broadcast for several reasons. Mr. Bernard Schoenfeld produced a finished and workmanlike tour de force of radio script writing. The special music composed for it by Rudolph Schramm was beautifully wedded to the subject matter, and Victor Bay conducted the orchestra shrewdly and sensitively. The cast had a difficult job to do but came through with an interpretation of great distinction. The broadcast had a most striking timeliness. It went on the air Dec. 20, 1937, in the pre-Christmas season at the time when the repercussions of the *Panay* incident were hanging ominously in the air. It seemed to be an answer to questions that were in everyone's mind and with eloquence and beauty pointed the way to peace.

* In May, 1938, "Christ of the Andes" was awarded honorable mention at The Ohio State University Institute for Education by Radio.

CHAPTER 12

RADIO WORKSHOP AND SCRIPT OF THE GIANT'S STAIR

No discussion of techniques of radio production would be complete without some mention of what has come to be called workshop radio. Rumor has got abroad in the land that only those are workshop radio programs that have about them something dramatically radical or freaky, something politically to the left of left, or something so murky that no one but the director and his admirers can understand what it is about. The rumor ought to be suppressed, because it is far from the truth. A radio workshop program is one that honestly tries to present to an adult-minded audience what it is hoped will be the best and most adult-minded product of the medium. Thus, by definition, it cannot hope to engage the attention of a tremendous audience. It can simply offer the best it has in the way of writing, acting, and direction and hope for the best.

What is one man's favorite workshop program is another man's earache. The schedule of programs for a workshop series ought to maintain a judicious balance between shows that are first-rate broadcasts aimed at a wide audience and shows that are frankly experimental, put on in the hope of trying out new forms that might advance the standard of radio production. If there should be no place to try out new forms, new uses of sound, new approaches to the problem of fitting words and music to the medium, radio would become atrophied and presently might cease to engage the interest of discriminating listeners. But experiment should be rational. The functionaries who decide what is workshop and what is not should be quick to throw on the junk heap the brummagem and the sensational. They should pass up the experiment that establishes nothing but its own fraudulence. They should have an instinct for recognizing quackeries of all sorts that are offered to them as possible history-making workshop broadcasts. To many proposed programs

they should give ear, but to few, their O.K.'s. A workshop should be directed alternately by several directors so that what it offers may show the sweep and impact of more than one mind. Directors touched with the messianic impulse gravitate toward workshop radio, and workshops have a way of becoming arks of the covenant. Care should be taken lest this happen.

No workshop program has done more to advance the level of excellence of radio as a medium of adult entertainment than the Columbia Workshop. The choice of plays has maintained a level of excellence invariably high and occasionally brilliant. They range from frank mechanical experiments through fantasy, opera, poetry, Grand Guignol, dramatizations of short stories, and plays. Schools and colleges contemplating the establishment of workshop programs would do well to study the catholicity of choice that went into the selection of material for the Columbia Workshop.

The following play, "The Giant's Stair," by Wilbur Daniel Steele, is offered as an example of Workshop drama for several reasons: first, because it is an adaptation by Charles R. Jackson of a one-act-play classic that presents a most effective dramatic study of cumulative terror, and second, because it is relatively simple to produce. Sympathetically directed and acted, it can make a compelling workshop broadcast.

COLUMBIA WORKSHOP

THE GIANT'S STAIR*

Thursday, Dec. 1, 1938
10:00-10:30 P.M.

ANNOUNCER

The Columbia Workshop presents . . . "The Giant's Stair" . . . by Wilbur Daniel Steele.

THEME: *Dramatic storm music, with decidedly eerie note. Fade behind*

NARRATOR

There is a single farmhouse at the upper end of a mountain valley, and from here the valley descends by easy, alluvial steps to the town

* This play is fully protected by the copyright law, all requirements of which have been complied with. No performance, either professional or amateur, may be given without the permission of the agents, Matson and Duggan, 630 Fifth Avenue, New York City.

below, a mile or two away. About this time of year, on November nights like these, prewinter winds blow up through the valley, up these steps to the solitary farmhouse, and fill the night with music, insistent, mournful, and menacing. When this happens, people in these remote parts say that giants are moving up the stairway to the mountain . . . people, that is, like the widow Mrs. Weatherburn and her mystical sister Til. . . .

Biz: *Eerie wind off mike.*

TIL

(*Her voice is always high-pitched, unaccented*) This is another of them nights, Abbie. Hark, Abbie! Hark to that!

MRS. WEATHERBURN

(*Absently*) Another of what nights, Til?

Biz: *Sound of stove lids being put on stove.*

TIL

One of them nights when the giants comes up the stairs to go on the mountain. Makin' noise as they come trampin' up the stairs.

MRS. WEATHERBURN

Going *down*, I should say, Til. The wind's from *up*.

TIL

No, giants goes against the wind. . . . Don't you know that?

Biz: *Stove lid bangs down.*

MRS. WEATHERBURN

Mercy livin', Til, look at what time it is. Past seven, and supper not started yet, to say nothing of laid. (*Sighs*) It's a queer, funny thing. When John was here . . .

TIL

When John was alive . . .

MRS. WEATHERBURN

When John was here, I'd have give him a piece of my mind if he'd been later than six o'clock for supper. And yet now, here it's *me* that's dawdlin' . . . lazin' and dawdlin' till all hours . . . now that John's away . . .

TIL

Now't John's dead . . . now't he's dead and gone for a ghost . . . troopin' along with the dead giants' ghosts . . . up the stair to the mountain! . . . Hark to that wind, Abbie!

MRS. WEATHERBURN

Don't hark to it! Don't pay any attention, Til!

Biz: Phone begins sharp ringing. After each ring, Til speaks, thus:

TIL

(Ring) The Smiths! *(Ring)* The Harrises! *(Ring)* The Wilsons!
(Ring) The Whites! *(Pause)* Whites, Abbie. Somebody wants Mis' White, probably. Who could be wantin' Mis' White's?

MRS. WEATHERBURN

Never you mind, Til.

MRS. WEATHERBURN

Til! Stop that! Put that receiver down!

TIL

It's Mis' Wilson, talkin' with Mis' White. She says . . .

MRS. WEATHERBURN

Til, that's none of your business. Put that down!

TIL

She says . . . Abbie! She says the Pros'cutor was by today, and what can the Pros'cutor be snoopin' 'round this neighborhood for . . . unless it's about . . . *Oh!* . . . *Oh!*

MRS. WEATHERBURN

For heaven's sake, Til! What's the matter?

Biz: Sound of receiver being replaced with vicious click.

TIL

They says I was list'nin'. They says that! Says somebody was snoopin' in on their line. Abbie!

MRS. WEATHERBURN

There! Don't take on so, Til. Come set down in your own chair, there's a good girl. *(Footsteps)* I'll take that telephone a minute and

. . . (*Receiver sound*) Yes, here's "somebody" again, May White. Yes, "snoopin'," Clara Wilson. Only it happens it ain't the same somebody, now. . . . Yes, it was Til. My poor sister Til. And all I wanted to say was, I think two ladies such as you would consider themselves in fine business, making fun of such a one as Til! . . . How? Yes, 'tis. Blowin' furies up here. Perfect cats and dogs. . . . How? The road bridge! (*To Til*) Til, Clara Wilson says the brook's so swole that the road bridge is like to go any minute. (*To phone again*) Don't tell me! Dear . . . me! I guess we shan't look to have any callers tonight, at any rate. More likely us to be comin' down your way, house and all.

TIL

(*Whimpers pitifully, etc.*)

MRS. WEATHERBURN

(*Hastily, to Til*) No, Til, no. That was only jokin'! No danger of that, I guess. (*To phone*) No, I was just speakin' to Til. Well, good night to both of you. Good night.

Biz: *Receiver is replaced. Storm howls up a minute . . . subsides.*

MRS. WEATHERBURN

(*As if to herself*) I wish John was here tonight.

TIL

Don't say that! Not with these . . . these giants movin' up the stair! They might hear you . . . and send him!

MRS. WEATHERBURN

Hush, Til. You're makin' me nervous.

Biz: *Footsteps . . . then stove-noises. Then sudden knocking on the door.*

TIL

Abbie!

Biz: *Knocking again, more insistent.*

MRS. WEATHERBURN

Til . . . you've got me scared now, myself, and . . .

Biz: *Door opens . . . rush of wind.*

BANE

Howdy, folks

TIL

Why, it's . . . it's only Sheriff Bane!

Biz: *Door slams . . . wind dies out.*

BANE

So, Til. Who did you imagine I'd be? And you, Mrs. Weatherburn. You're not still hopin', are you? Or *mistrustin'*?

MRS. WEATHERBURN

(*With an effort at control*) It was only you give us such a start. To think of any livin' mortal being out tonight . . .

TIL

Along with *them that ain't!*

BANE

You can be sure I wouldn't be out if I'd known how bad it was. It wasn't anything like so bad when I started. I been up the mountain all afternoon looking for them two young heifers of mine that's been strayed since Tuesday night. You ain't seen 'em, I suppose?

MRS. WEATHERBURN

No, we ain't, neither one of us.

BANE

Well, when it come on so all-creation bad and I see the light in your window . . .

MRS. WEATHERBURN

And quite right you was, Bane. Look at you . . . drowneded! Take off that coat and draw up to the stove.

BANE

No, thank you, my boots are all mud. I'll just take a chair by the door here a spell, if you don't mind.

TIL

What did them red heifers of yourn die of?

BANE

Die of? They ain't died of anything that I know of. Why?

TIL

I only thought it was queer a body'd be searchin' for anything *livin'* . . . up this mountain here . . . tonight. Did you hear any of 'em round about you?

BANE

Any what . . . heifers?

TIL

The giants. Comin' up the stairs.

BANE

Giants! I declare for the woman. There ain't no such thing as giants alive!

TIL

No, they're all dead now . . . long ago, long ago. And then with them other dead, they pass up through the trees and the bushes . . . troopin' up . . .

BANE

What's all this foolishness about, Mrs. Weatherburn?

MRS. WEATHERBURN

Nothing, Bane. Don't mind Til. She's got it in her mind it would be hard for anything mortal to get up the road tonight. We heard on the telephone the bridge to Wilson's is like to go out any minute. You'll hardly get home tonight, I'm afraid, will you?

BANE

Don't look it. I'll set here, if you don't mind.

MRS. WEATHERBURN

Land, no! But you ain't et. No more have we. I'll put some eggs on directly. . . .

BANE

I've et. Before I started.

MRS. WEATHERBURN

But I thought you was on the mountain all after . . .

BANE

(*Hastily*) I . . . that's what I was going to say. . . . Only . . . only you didn't let me finish. Before I started *down* I et, I was going to say . . . havin' takin a snack along with me in a paper. See?

MRS. WEATHERBURN

Oh! (*Pause*) Well, you don't mind if we have oun, Til and me. I was just gettin' at it.

BANE

No. But *I've* et.

Biz: *Sounds at the stove. Storm up a moment, then down.*

TIL

The first step on the stair is the Smiths. The next step is the Harrises. Big huge steps in the dark. It's feelin' for 'em with their feet in the dark makes all the noise. The next step after Harrises is the Wilsons.

MRS. WEATHERBURN

Never mind, Til.

TIL

And then the next step is *us*.

MRS. WEATHERBURN

Bane, there's one thing I'd like if you'd make clear. When you come in you says to me, "Still hopin'?" And by that I take it you mean still hopin' it might be my husband come back.

BANE

I did.

MRS. WEATHERBURN

But it's what you says next I want explained. "Or mistrustin'!" Why did you say "*Or mistrustin'*"?

BANE

What'd I mean? Land! I never meant . . . I mean it was more like a . . . a joke. Only . . .

MRS. WEATHERBURN

Only *what*, Bane?

BANE

Nothin'! Only . . . (*Pause*) Mighty comfortable here, Mrs. Weatherburn, a night like this. See you been brightenin' things up a bit since John was . . . was gone, eh? Them window curtains make a difference now, don't they? John Weatherburn was never very much on decoration, was he? And that pink lamp shade. Makes the room a mite cheerier, don't it, though?

MRS. WEATHERBURN

You think so?

BANE

And then the telephone. A telephone's a comfort, especially to women folks. I'm glad you got the telephone after all these years, to kinda connect you with the outside world, you might say. John was never very much for contraptions, was he? 'Specially when they cut into the money. John was insured, wasn't he?

MRS. WEATHERBURN

Is there anything in this valley, stick, stone or haystack, *ain't* insured, and insured as high's ever the agent'll let you?

BANE

Why did you say "haystack"?

MRS. WEATHERBURN

Why shouldn't I say "haystack"?

TIL

And then the next step after us goes right on up on the mountain . . . and all the bridges are out in the dark and the brook is roarin' and tumblin' . . .

MRS. WEATHERBURN

Bane, you never come here tonight about *heifers*!

BANE

Well, as a matter of fact . . . Set down, Mrs. Weatherburn.

MRS. WEATHERBURN

Thank you, I'll stand!

BANE

(*Too casually*) Was a Mr. Cantpole by today?

MRS. WEATHERBURN

That's the Pros'cutor, ain't it?

BANE

Yes, Cantpole is the Pros'cutin' Attorney.

MRS. WEATHERBURN

Yes, he was by. What's more, you know well enough he was by. Look here, Bane, speak out! Is it about John?

BANE

About John's vanishin'.

TIL

(*Dreamily*) About John's dyin'. About John's dyin' of murder in the dark.

BANE

(*Loudly*) And how did *you* know he was murdered, Til Jessup? *How'd you come to know?*

TIL

How'd I come to know? Why . . . why, I'll tell you how. I hear Mis' Wilson sayin' as much on the telephone . . . day before yesterday, 'twas. (*Phone rings*) Smiths! (*Phone rings again*) Harrises! There, it's for Mis' Harris now. Wonder who could be . . .

MRS. WEATHERBURN

Set still and leave it be, Til.

BANE

I trust you'll believe me, Mrs. Weatherburn, when I tell you 'tain't my own wish I'm here tonight. It's Cantpole sent me. I shouldn't've moved of myself, same as I *ain't* moved before this.

MRS. WEATHERBURN

Yes, I've give you credit for a deal of sense . . . till now. I says to myself, there's one man in the valley's got sense enough to know John must've just gone away for a spell, somewheres, by himself.

BANE

No, Mrs. Weatherburn, it wasn't that. For that wouldn't be *sense*. Now what manner of sense would there be, tryin' to believe a man like John Weatherburn, a solid church-going man with a good farm and a bank account . . . a good bank account . . . that a man like that would be changing all of a sudden, one special night, and skippin', no word to anybody and never heard of again? No, that's too much!

MRS. WEATHERBURN

There's queer things happens in the world.

TIL

There's queer things happens in the world.

BANE

No, no, 'tain't that, 'tain't that. It's something else. Mr. Cantpole never lived in this valley. I have. Why, I've known John Weatherburn since him and I was boys. Boy and man, I've known him. Why, I was the last person to see him alive.

MRS. WEATHERBURN

So I hear.

BANE

(*Pointedly*) The last that'll *confess* to it, anyhow. When he left me that night, there in my pasture . . . when I see him walking away in the dusk of the evening . . . if I had thought . . . if I had been able to know what was in store . . . Oh, dear! It sets heavy, Mrs. Weatherburn. It's set so heavy on me I ain't been myself. The farm work's suffered. Nothing tended, nothing done. And here's the Pros'utor after me all the while: "When you goin' to act, Sheriff?" And me settin' home thinkin', thinkin', "Sorrow has come on that family up there. Poor Mrs. Weatherburn." But today, when Cantpole was by, there wasn't no "When you goin' to act?" This time it was: "*Act!*"

MRS. WEATHERBURN

So you acted! Til, would you mind gettin' me in some wood? That's a good girl. And wait! Take along this lantern . . . (*Sound of lantern*

being opened) For I want some good sticks this awful night. Good, medium small, square sticks. Mind, pick them careful, Til. That's a good girl. (*Door opens . . . rush of wind . . . closes*)

MRS. WEATHERBURN

(*After brief pause*) So, Bane, you acted! You come to accuse me of murderin' John!

BANE

Not so fast. Not so fast. I come here at Cantpole's orders . . . simply to have a look around. That's all.

MRS. WEATHERBURN

Looks like it.

BANE

Is that John's gun up there?

MRS. WEATHERBURN

Yes, it is.

BANE

Hmm. Good gun. (*Pause*) D'you ever try shootin' this gun, Mrs. Weatherburn?

MRS. WEATHERBURN

No, I never shot that gun.

BANE

Sure of that, ain't you?

Biz: *Muffled pounding on door.*

TIL

(*Way off mike, muffled*) Open the door for me, Abbie!

MRS. WEATHERBURN

More wood than that, Til! More wood'n that! (*Pause*) What do you mean, Bane?

BANE

I just mean . . . I was just wonderin' . . . if it wasn't . . . Let me just look at this gun a little closer. (*Sound of gun breaking*) Just wonderin', Mrs. Weatherburn, if it *wasn't* you, then who was it!

MRS. WEATHERBURN

(*Brief pause*) I'll tell you who 'twas. It was my husband himself. I recollect now. 'Twas the day before he . . . left. I recollect him comin' in with that gun, sayin' as how he had shot at some quail up in the stone pasture. But he'd missed.

BANE

I don't doubt your word, Mrs. Weatherburn, nor your recollection. All I want to say is . . . he never shot *this* gun. If your husband . . . or any other man . . . was to've shot this load, he'd 've cleaned it after him. He'd sit up all night cleanin' it! (*High-pitched excitement*)

MRS. WEATHERBURN

Give me that empty cartridge and that gun! They're my prop'ty, not yourn.

BANE

No, sir. Sorry, but I guess I'll want to hang onto these articles a spell.

MRS. WEATHERBURN

(*Deliberately*) . . . What would you do if I was to tell you 'twas me shot that gun?

BANE

Shouldn't believe you.

MRS. WEATHERBURN

Then what're you after?

BANE

You and John been gettin' on well together these past few months? I don't know as I take much stock in gossip, but they do say John wasn't always the easiest man on earth to get along with . . . to home. Good man . . . savin' man . . . but tempery, they say. And, of course, there's women with tempers, too.

MRS. WEATHERBURN

I shouldn't stand here hark'nin' to you!

BANE

Yes, women with tempers too. 'Specially out on lonesome farms . . . without gossip nor sociability nor nothin'. Tryin' to the temper, that is. 'Specially after it's been goin' on some years . . . draggin' on . . .

always the same . . . workin' on the mind and temper. Specially with a man to put up with . . . a sober man, a saving man, but . . .

MRS. WEATHERBURN

Bane, them ain't your words! Them ain't your ideas!

BANE

I grant it. They ain't mine. They're the Pros'cutor's.

MRS. WEATHERBURN

(Menacing) You . . . give . . . me . . . that . . . gun!

BANE

I shan't.

BIZ: *Door blows open . . . rush of wind . . . closes. Then, after a pause*

BANE

Look here, don't let's bicker over the gun. Let's leave Til decide. Here, Til, take it.

TIL

(Utters small scream)

BANE

What's wrong, Til? It's a good gun, ain't it?

TIL

Don't want it!

BANE

Why?

TIL

Kills things! Murders things! All kinds o' things it murders and kills!

BANE

Then why did you shoot it that time?

TIL

(Vaguely) I . . . I don't know. I . . . I feel like I wanted to . . . to horrify myself. Wanted to hear it bang. To . . . horrify myself!

BANE

And what did you shoot *at*, Til?

TIL

Nothin'. Least ways nothin' but giants and ghosts and the like.

MRS. WEATHERBURN

You leave her alone!

BANE

In the dark, it was?

TIL

In the dark.

MRS. WEATHERBURN

Ed Bane, if you pertend to think Til knows what she's sayin' . . .

BANE

I don't pertend to think, one way nor t'other. That's other folks' business. All I say is, don't be s'prised. When John's body comes to be found one of these days, hid in the bushes somewheres or under somebody's haystack . . . I say, don't be s'prised if his head's found half blown off with a charge of bird shot. Mark what I say and don't be s'prised. That's all.

MRS. WEATHERBURN

Set down, Til. Now, you listen to me, Ed Bane . . .

Biz: Phone rings as before.

TIL

Smiths! (*Ring*) Harrises! (*Ring*) Wilsons! (*Ring*) Whites! (*Ring*)
Us. Us, Abbie. Shall I . . .

MRS. WEATHERBURN

Set still. Set down, Til. (*Phone click*) Hullo? Yes, it's Abbie. . . .
Yes, what's wantin', Marion? (*To Bane*) It's to your house, Bane.
Your sister speakin'. Would you want to . . . (*Pause. . . . To phone again*) How? (*Pause*) How? (*Very long pause . . . phone is heard to click . . . then dully, aloud, but to herself*) It's him.

BANE

Not John?

MRS. WEATHERBURN

John.

TIL

Not . . . *livin'*!

MRS. WEATHERBURN

In the flesh.

TIL

(Shaking her head solemnly) No. . . . No, no, no.

BANE

John. Well, of all things. And me here, then, all for nothin'. But how come? Where's he been to? Not to *my* house? Did Marion . . . say he was?

MRS. WEATHERBURN

(In monotone) 'Twas your hired man, Eggar, see him, Marion says. She says Eggar was up to the pasture just now, lookin' to get the colt in out of the storm. He had a lantern with him, lookin' everywheres for the colt. He thinks he see somethin' movin' along the road, and, thinkin' maybe 'twas the colt had got out, he climb the fence there near Harris' haystacks. . . .

BANE

Where?

MRS. WEATHERBURN

By Harris' road where his haystacks are. . . .

TIL

Maybe he's been under Harris' haystacks. Seems I hear somebody sayin' he might be under somebody's haystacks.

BANE

Go on!

MRS. WEATHERBURN

. . . where his haystacks are, and then he see 'twasn't the colt after all. 'Twas a man. Walkin' along in the rain, his hat pulled down. Eggar give him good evenin', and when the man give him no answer Eggar throw the light in his face, and he couldn't believe his eyes when he see it was John. But John never says a word but come on up along the road like a . . . a deaf man. . . .

TIL

A dead man . . .

MRS. WEATHERBURN

He look wore out, Eggar says.

TIL

Wore out. No wonder. Wore out.

BANE

(*Hearty*) Well, I vow! Of all things.

MRS. WEATHERBURN

I s'pose I better put on somethin' hot to eat, if John's comin'.

BANE

I shouldn't worry. He may be *comin'*, all right, but I doubt if he'll make it a night like this. It's too much for mortal man, the way the brook's swole, and the wind . . .

MRS. WEATHERBURN

What will I give him? Let me see, let me see. . . . (*Almost breaks into weeping*) Oh, dear . . . oh, dear. (*Sobs*)

TIL

Hark to 'em . . . hark to 'em comin', making a moan and a drone on the stairs o' the mountain. Hark to that, Abbie.

BANE

Drat the woman. . . . Come, come, Mrs. Weatherburn, don't give in to yourself. Seems like you should be happy, instead.

TIL

Hark to 'em troopin' up the stair! Hark to 'em swishin' through the trees!

BANE

Pester the crazy girl. Come now, Mrs. Weatherburn! I know it's a shock to you . . . a happy shock, of course, but a shock all the same. You've had your cry afore. Now's the time to smile. Ain't you glad John's turned out alive, after all? Eh? Ain't you glad?

MRS. WEATHERBURN

Am I glad? (*With vehemence*) If you was to know *how* glad.

BANE

There, that's better. It's but natural a woman should be glad, havin' her husband back, safe and sound.

MRS. WEATHERBURN

Tain't that, Bane. (*Pause*) Til, I know what I'll put on for supper. You know that fowl I got hung for Sunday out in the shed? You go bring it in for me.

TIL

He won't want it.

MRS. WEATHERBURN

(*Sharply*) Til, you do as I say.

TIL

(*Sullenly*) I don't like the dark. There's things!

MRS. WEATHERBURN

Don't be a scared cat. Here, take this lantern, and the dark won't be there.

TIL

(*Whimpers*)

MRS. WEATHERBURN

There, that's a good girl.

Biz: *Door opens . . . wind sound . . . closes.*

BANE

Now, what you mean by "Tain't that!" Ain't you glad to have John back?

MRS. WEATHERBURN

John's comin' or goin' . . . specially after all this . . . ain't apt to affect my happiness one way or the other. That's what I mean, Bane.

BANE

You do speak out, don't you. But you said you was glad he was . . .

MRS. WEATHERBURN

Alive! Glad to know it. More glad and relieved than I can . . . ever say.

BANE

I see now! Then after all, it was about her.

MRS. WEATHERBURN

Yes. About Til.

BANE

You wa'nt so sure as you made out about Til, was you? About that gun, and shootin' at ghosts, and all that.

MRS. WEATHERBURN

(*With some anguish*) I tell you I didn't know *what* to think. Oh, if you'd had the bringin' up of that poor creature. If you'd had the worry of her and the shieldin' of her . . . and knowin' every minute you can never tell what was next in her poor wild brain. And then I was away that night, too. 'Most an hour I was away, down to Mrs. Wilson's . . . And then there's another thing. Til's fond of me. She's like a faithful dog. I b'lieve she'd do *anything* for me.

BANE

Then maybe you and John had words or somethin'. . . .

MRS. WEATHERBURN

We did have words that day. John was his worst. Over my wantin' the phone. He lay a hand on me for the first time.

BANE

And Til see him?

MRS. WEATHERBURN

Til see him. Oh, if you'd had that thought weighin' on your brain, week after week. . . . Oh, you'd know why I was glad.

BANE

I'm glad you been frank, Mrs. Weatherburn. I'm glad you've told me these things. I shan't forget . . . and I hope *you* won't forget!

Biz: *Door bangs open . . . rush of wind . . . shuts.*

MRS. WEATHERBURN

What's wrong, Til? Where's the fowl?

TIL

There's things. They blow out my lantern.

MRS. WEATHERBURN

Til! Where's that fowl?

TIL

(*Sulkily*) He won't want it. Where's the use of spoilin' earthly victuals for . . .

Biz: *Telephone rings.*

TIL

Smiths! (*Ring*) Harrises! (*Ring*) Wilsons! (*Ring*) Whites! (*Ring*)
Us! Abbie . . . they've see him again!

MRS. WEATHERBURN

Be still. (*Phone clicks*) Hello . . . Yes, it's me, Mattie. . . . How?
Speak louder. . . . Yes, I hear now. . . . Yes, I tell you I hear. . . .
(*Long pause*) . . . Yes, I'm list'nin'. He wasn't himself, you say.

TIL

Abbie!

BANE

Be quiet, Til!

MRS. WEATHERBURN

Yes, Mattie, yes, I heard it all. Much obliged, Mattie. (*Phone clicks*
. . . *pause*)

TIL

Abbie!

MRS. WEATHERBURN

(*As if to herself*) What's ailin' him, I wonder? There's something
queer. . . .

TIL

Abbie, say somethin'. Where was it . . . to Harrises, this time?

MRS. WEATHERBURN

Yes, to Harrises. He's been by. 'Twas Harris himself see him. He was coming back from havin' a look at the road bridge, Harris was, when he met him. Mrs. Harris says Harris got home in a sweat, as if he'd seen a ghost.

TIL

Yes. He see a ghost.

MRS. WEATHERBURN

Seems Harris speak to him before he see who he was. Harris was so laid out for a minute he couldn't move. Then he thinks of the bridge again, and, "John," he says, "if you *are* John Weatherburn, as you seem to be, you best come back to my house along with me." And by that, John was gone on up the road and disappeared.

BANE

And the bridge out, ahead of him.

MRS. WEATHERBURN

Mercy angels. He'll walk straight in.

BANE

No, but he'll see . . .

MRS. WEATHERBURN

Straight in and be drowned.

TIL

(Laughs eerily)

BANE

Stop it! Quit it!

TIL

(Laughs wildly)

BANE

(In a fury) Pester you! If you don't quit that! Why do you keep laughin' that crazy way?

TIL

It's the horror! It's the horror gettin' in my throat!

BANE

Horror of what?

TIL

Him! Comin'! Comin' up the giant's stair. He'll be comin' in the door there, takin' off his hat there, settin' down in his chair there without sayin' a word, with his back to us all, so we can see the back of his head shot away, with the straws stickin' to it . . .

BANE

(*Shouting*) Straws! Where from!

TIL

From Harris's haystacks. Didn't you say he come from Harris's haystacks? I hear you say awhile back . . .

BANE

Mrs. Weatherburn, mark that! I call on you to make note of that! I'll ask you to recollect that!

MRS. WEATHERBURN

What are you talkin' of . . .

Biz: *Phone rings.*

TIL

Smiths! (*Ring*) Harrises! (*Ring*) Wilsons! (*Ring*) Whites! (*Ring*) Us! Us, Abbie!

Biz: *Phone receiver click.*

MRS. WEATHERBURN

Yes, it's me . . . (*Pause . . . then gasp. . . . To the others*) They've found his . . . his body.

BANE

Where? I demand you tell me where!

MRS. WEATHERBURN

(*To phone*) Where? In the brook? (*To Bane*) No, not in the brook. This side. By Wilsons. Jo Wilson see the body lyin' in the mud down by their gate. He come back to get Ed. (*In phone*) Yes, Clare? How? Gone. You didn't say . . . gone! (*Receiver click*) . . . When

Jo and Ed got back to the gate, it was gone. So it couldn't have been his . . . He couldn't've been *dead*. He must've just fainted there a minute.

TIL

(Laughs crazily)

BANE

I'll kill you, Til Jessup! I'll strangle you if you don't leave off that. . . . *(Sound of struggle)* Here! Where you goin' *now*? *(Scuffle)* Til, if you open that door . . . Mrs. Weatherburn, make her quit it, the crazy ravin' thing. *(Sound of latch lifted . . . door opens . . . wind, etc.)*

MRS. WEATHERBURN

Til . . . what're you carryin' on so for?

TIL

To horrify myself. I got to look. To *horrify* me! I see him. . . . Black as pitch it is, and yet I see him. Under the trees he is . . . comin' on . . . comin' on by the road toward Whites!

BANE

That's the end. That's enough.

TIL

In the black dark there . . . his dead eyes shinin' pale in his head . . . pale in the drippin' dark. You'd think he'd drag his feet, but he don't drag his feet. His feet's not on the ground. Inches above the ground his feet is, and he comes on floatin' against the wind . . . up the stair . . .

BANE

That's the end. *(Sound of struggle . . . then door slams . . . wind out)* Just for that, Til Jessup, to learn you . . . for that . . . I arrest you, Til Jessup, in the name of the law. I arrest you for the murder of John Parsons Weatherburn!

MRS. WEATHERBURN

Ed Bane, you crazy? What you sayin'? And him comin' here in the flesh!

BANE

Tain't so! It's all a trick! Why did you think the Pros'cutor'd been callin' on every house in the valley today? All a trick of Cantpole's

doin'! *Prearranged*, every mite of it. Rehearsed, every word of it. There, don't you believe me? Me? That was with him when he arranged it? You hear me, Til? I arrest you for the murder. Moreover, I arrest you for goin' ahead and concealin' the corpse . . . by your own confession, mind you . . . in one of Harris's haystacks. . . .

MRS. WEATHERBURN

Bane, that ain't true. You're just twistin' the poor child's own words about . . . to your own ends.

BANE

Own ends, you say? I'll ask you to weigh your words, Mrs. Weatherburn. Next thing you'll be accusin' *me* of . . . of . . . most anything! Accusin' *me*, the Sheriff of Twinskill County. Of . . . most anything!

TIL

(*In dreadful monotone*) Comin' on swifter now, he is. Comin' on. He's been by Whites now. Mis' White see him. In the light from the porch she see him. Now she's going back through the hall, white's a sheet. Now she's goin' across the dining room. Now she's to the telephone. . . .

Biz: *Phone rings.*

TIL

(*Exultantly*) Smiths! (*Ring*) Harrises! (*Ring*) Wilsons! (*Ring*) Whites! (*Ring*) Us! *Us*, Abbie. . . . Hello! Yes? Yes? Quick, Mis' White. Yes? . . .

BANE

(*Savagely*) Give me that. . . . Who's there? Hullo? Hullo? Who's there? It's me, Sheriff Bane. Hullo! Hullo! . . . (*Off phone*) They've gone. (*Rattle of phone hook*) Hullo! Hullo! Blast this phone. (*Wrenching noise as phone is pulled from wall and dashed on the floor*) There, now, that'll be the end o' that. Go on and ring now. Ring!

TIL

He's on the farm now. I hear the gate just now. In the roar and moan of the wind I hear the gate. John! John! (*Door opens . . . wind*)

MRS. WEATHERBURN

Oh, *Til!*

BANE

Oh, "*Till*" I'll "*Til*" her. I'll "*Til*" the crazy loon!

Biz: Sound of struggle and as she drops back. . . . door slams wind down. Clatter as latch breaks and falls to floor from violent slam.

TIL

You broke the latch! Now you *can't* keep it shut!

BANE

I guess I can. I guess I can. I'll hold it . . . all my weight against it.

TIL

(After a pause) There . . . listen. *(Long pause)* That's the other gate. He's nearer.

BANE

I never heard a thing.

TIL

You hear that, then? On the gravel? He's come out of the wind now. He's got his feet on the ground now. Hear that?

BANE

No! No!

TIL

On the step! He's just outside, standin' on the sill!

BANE

(Hoarsely) Go away! Go away, I tell you. *(Beats on the door)* Go away!

TIL

He ain't gone. He's still standin'.

BANE

(Voice against the door) I'll tell you something! You listenin'? I got a gun here. It's your own gun, John, and it's loaded. Right here to my hand I got it.

Biz: A muffled knock, as of a soft glove on the hand, on door from outside.

TIL

Gives a little cry.

BANE

No, you won't. You can't. You can't touch me, John Weatherburn. No, sir. It wasn't my fault. You oughtn't've called me a liar, there by the gate. Not with a gun in my hand. You oughtn't've dared strike me. Not when I had a gun in my hand. You ought've known me better'n that, John. Your own fault John . . . 'twasn't mine. . . .

VOICE OUTSIDE

Open the door, Bane. Open I tell you.

BANE

What? Who? . . .

VOICE

I say, open the door, Bane. It's Cantpole.

BANE

(Hushed) It's Cantpole. Thank God, it's only Cantpole!

TIL

John's went and brought the Pros'utor with him.

Biz: Door opens . . . wind in . . . long pause.

CANTPOLE

Good evening, Mrs. Weatherburn. I just dropped up from Mr. White's place, as by *arrangement* with Mr. Bane. . . . So just as well I came.

TIL

Gives a strange, wild cry.

CANTPOLE

Good Lord! What's *that*!

MRS. WEATHERBURN

It's my sister Til. . . . Til, come back here! Where you goin' to?

TIL

(Going off mike) I'm going to *horrify* myself!

MUSIC: Up dramatically . . . hold . . . then fade behind

ANNOUNCER

You have just heard a presentation of Wilbur Daniel Steele's famous one-act play, "The Giant's Stair," adapted for radio by Charles R. Jackson. This was the third of three well-known short works by Mr. Steele, presented by the Columbia Workshop. The first two were "A Drink of Water" and "Luck." Tonight's broadcast featured _____ as Mrs. Weatherburn; _____

_____ as Til; and _____ as Sheriff Bane. Music was composed and conducted by Bernard Herrmann, and the entire production was under the direction of Earle McGill. Next Thursday evening at this same time, the Columbia Workshop will present, etc., etc., etc. This is the Columbia . . . Broadcasting System.

(Fade theme 20 seconds)

10:30 P.M. B-U-L-O-V-A Bulova Watch Time . . . WABC . . . New York.



APPENDIX I

CATALOGUE OF RECORDED SOUND EFFECTS

The following recorded sound effects are in use constantly as part of the library of sound of the Columbia Broadcasting System. These records are purchasable in record shops in the larger cities or may be ordered directly from the manufacturers. The sounds in these recordings were produced to fit into a wide variety of dramatic situations, and their listing here is given as a convenience to directors who may wish to avail themselves of them without any assurance or guarantee that they will exactly fill every need. For convenience each general classification is catalogued in numerals of hundreds. First, voices and applause records are listed in one hundreds, then autos and motorcycles in two hundreds, etc. The letter A refers to one side of the record, and the letter B, to the other. The initial and number after a record indicate the company that manufactures it and its catalogue number. Where, on any one side, several effects are listed as present, each effect has its own "cut" on that side. For example, on record 105-B there are screams in one cut, snores in a second, and typewriters on a third. In several instances it will be noted that there is a warning not to use one side. This would indicate that on that side of the record music or other copyrighted material is present that would need to be cleared before it is used.

The following is the key to the catalogue numbers, giving the names of the manufacturers and their addresses:

Y.B.-1 etc.	Columbia Recording Corp. (English release). Order from dealer or from 799 Seventh Avenue, New York.
1000-2000, etc.	Gennett Records. Order from Gennett Records Company, 729 Seventh Avenue, New York City or Richmond, Indiana.
M.100, etc.	Masque Sound and Recording Corp. Order from dealer or from 521 Fifth Avenue, New York.
7800, etc.	Speedy-Q Sound and Recording Corp. Order from company located at 1344 South Flower Street, Los Angeles, Calif.
ST.1, etc.	Standard Radio, Inc. Order from company located in Hollywood, Calif., or from office located in the RKO Bldg., New York.
VAL.	Valentino Records. Order from Thomas J. Valentino, 729 Seventh Avenue, New York.
S.E.1, etc.	Victor Sound Effects (RCA). Order from dealer or direct from RCA, Victor Division, RCA Manufacturing Co., Inc., Camden, N. J.

The list of sound effects records that follows does not pretend to be final. Effects catalogues are constantly being expanded. Most of the companies mentioned will record effects to order.

VOICES AND APPLAUSE

100-A	General confusion	M.502
-B	Applause	
101-A	General confusion	1002
-B	Laughing	
102-A-B	General confusion ("Concert Hall")	1148
103-A	Cheers	Y.B.3
-B	Clashing of swords	
104-A-B	Restaurant noises (don't use second cut. Contains copyrighted material)	S.E.34
105-A	Baby crying	1003
-B	Screams; snores; typewriters	
106-A-B	Mumbling (female) (mixed)	S.E.10
107-A	Children—laughing, playing	1069
-B	(Don't use this side)	
108-A-B	Crowd (football game)	1050
109-A-B	Excited crowd (ball game)	1160
110-A	Players warming up (baseball)	1161
-B	Crowd (ball game)	
111-A-B	Cheers; laughter; applause	S.E.3
112-A-B	Fight—mixed; male	S.E.8
113-A	Applause; cheering	1001
-B	Excited crowd (baseball or football)	
114-A	Applause	ST.2
-B	Model T Ford—continuous Model T Ford—start; run; stop Dog (collie) barking	
115-A-B	Boos; hisses; wails (mixed)	S.E.9
116-A-B	Cheers	S.E.11
117-A	Confusion (large crowd at sports events)	M.503
-B	Same	
118-A	Confusion of voices (women)	M.504
-B	Confusion of voices (small and large group of men)	
119-A	Conversation and laughter (women)	M.505
-B	Conversation and laughter (men)	
120-A	Laughter (men and women, mixed small group)	M.506
-B	Laughter (men and women, mixed large group)	
121-A	Confusion of voices (mixed)	M.507
-B	Same	
122-A	Angry mob	M.508
-B	Applause (small and large group)	
See also 313 Crowd effect (small group)		
See also 1108 Screams of terror; mixed boos		

See also 217	Baby cries
See also 912	Applause; cheers; laughter
See also 1122	Baby cry; angry mob
See also 1126	Crowd at bird show
See also 656	Crowd (wrestling match)
See also 429	Babies crying (nurse)
See also 1014	Restaurant noises

AUTOMOBILES AND MOTORCYCLES

200-A	Auto—4-cylinder, shut door; start; run	1009
-B	Auto—crashes	
201-A	Auto—6-cylinder, shut door; start; run	1008
-B	Auto—6-cylinder, continuous running	
202-A	Auto—continuous running	M.201
-B	Auto—start, and idle	
203-A	Auto—starter; shifts; run; stop	M.203
-B	Auto—approach high speed; stop; pass at high speed	
204-A	Auto—Model T Ford, continuous running	1156
-B	Auto—Model T Ford, crank; start; idle	
205-A	Auto—8-cylinder, continuous running	1063
-B	Horns (various types)	
206-A	Auto—races—passing at high speed	1087
-B	Auto—races—continuous (dirt track)	
207-A	Auto—races—passing at high speed	1113
-B	Auto—races—start; idle; pull away	
208-A	Auto—(7 cuts) door; start; idle	1150
-B	Auto—approach; squeak of brakes	
209-A	Plane-crash; auto-skid; auto-crash	ST.14
-B	(Don't use this side)	
210-A	Auto—start; shift gears; horn	S.E.20
211-A	Auto—(5 cuts) Model T Ford, crank; start; idle	1157
-B	Auto—approach; pass; recedes; continuous running	
212-A	Motorcycle—start; run; stop; start and idle	M.202
-B	Motorcycle—approach and stop; start and pull away; passing at high speed	
213-A	Explosions	ST.26
-B	Air hammers; tire skids (30 seconds long)	
214-A	Tractor—Fordson, ploughing	1162
-B	Tractor—idle; shift; and plough	
215-A	Auto—Packard, start and backing; tire skid; and stop	ST.28
-B	Diesel-electric train—arrive and stop; start and run	
216-A	Moving car—in traffic	S.E.36
-B	Moving car—no traffic	
217-A	Packard—start and run	ST.27
-B	Baby cries	
218-A-B	Auto—idle, start, run, stop	S.E.35

219-A	Auto races	M.206
-B	Airplane crashes; auto-skid crash	
220-A	Auto starter; start and idle	M.207
-B	Old model auto—continuous	
221-A	Auto—continuous (old model car)	M.208
-B	Auto horns	
222-A	Model T—starter; start and idle	M.209
-B	Auto horns	
223-A	Model T—start; run	M.210
-B	Auto horns	
224-A	Model T—starter; start and idle	M.211
-B	Model T—continuous	
225-A	7-ton truck—start; run; climb steep grade; gear shift	M.213
-B	7-ton truck—fast; idle continuous; slow; idle; clashing of gears	
226-A	Tractor—continuous	M.212
-B	7-ton truck—start shifting gears; run; stop	
See also 611	Tractor—start; run; stop	
See also 114-A	Applause	
-B	Model T—continuous	
	Model T—start; run; stop	
	Dog (collie) barking	
See also 504	V8 Ford continuous running	
See also 800	Same record as No. 213	
See also 756	Tractor	
See also 914	Auto horns	
See also 604	Auto horns	
250-A	Motorcycle—start; run; stop; start and idle	M.202
-B	Motorcycle—approach and stop; start and pull away; passing at high speed	
251-A	Police squad car—start; run; stop	M.204
-B	Police squad car—start; pull away; approach and stop; pass at high speed	
252-A	Police motorcycle—start; run; stop	M.205
-B	Police motorcycle—pass at high speed; start; pull away; approach and stop	
See also 604	Fire siren; ambulance or police bell; auto horn	

AIRPLANES

300-A	Planes—take-off; fly; land	1036
-B	Planes—flying in circles	
301-A	Plane—flying overhead (single motor and tri-motor)	1041
-B	Plane—take-off; single motor; twenty planes passing overhead	
302-A	Plane—single motor; zooming and swooping	1042
-B	Landing and idling	

303-A-B	Plane—take-off; circling	S.E.13
304-A-B	Plane—challenger	S.E.30
305-A	Plane—battery starter, take-off and fly (Douglass)	M.101
-B	Battery starter, start and idle; taxiing and revolutions up (Douglass)	
306-A	Plane—flying; landing; idling (Douglass)	M.102
-B	Plane—single-motor army landing and idling; Single-motor Stinson landing	
307-A	Plane—single-motor army, motor missing; wind in struts; landing	M.104
-B	Plane—single-motor army overhead	
308-A	Planes—diving and zooming (Army)	M.105
-B	Planes—13 in formation landing (Army)	
309-A	Planes—13 overhead in formation (Army)	M.106
-B	Plane—(4 cuts) take-offs	
310-A	Planes—aerial dogfight	1186
-B	Planes—aerial dogfight with ground firing	
311-A	Plane—starter; idling; take-offs flying (Army)	M.103
B	Plane—idling and take-off	
312-A	Plane—idling, full power continuous	1037
-B	Plane—flying in circle (single-motor)	
313-A	Plane—power dive and crash (3 cuts); take-off	ST.12
-B	Crowd effect (small group)	
314-A-B	Airplane idle (motor boat)	S.E.12
315-A	Planes—single-motor take-off	1043
-B	Planes—tri-motor take-off	
316-A	Planes—airplanes racing	7805
-B	Burros braying	
See also 209 Plane crash		

TRAINS

400-A	Passenger—approach; pass; recede	1004
-B	Freight—approach; pass; recede	
401-A	Passenger—start and leave station	1005
-B	Freight—continuous; passing	
402-A	Passenger—distant whistle	1034
-B	Passenger—enter station; stop; standing	
403-A	Passenger—standing in station; Start; whistle; leave	1035
-B	Railroad station—miscellaneous trains	
404-A	Passenger—pass at high speed with whistle	1100
-B	Freight—pass at high speed with whistle	
405-A	20th-Century train	VAL.
406-A-B	Passenger—continuous inside coach	1181
407-A	Railroad terminal	M.401
-B	Idle engine, with bell and without bell	

408-A	Passenger—approaching and passing with crossing bell; approaching and passing without crossing bell	M.402
-B	Freight—approaching and passing with crossing bell; Approaching and passing without crossing bell	
409-A	Local passenger locomotive	M.403
-B	Train—to stop and pull out; Idle engine with bell and steam; crossing bell	
410-A	Fast passenger locomotive—start and continuous running	M.404
-B	Passenger—start; run; stop; inside train	
411-A	Passenger—start; run; stop; inside train	M.405
-B	Passenger—continuous inside train	
412-A	Passenger—start; run; stop; inside train	M.406
-B	Passenger—continuous inside train	
413-A	Freight terminal	M.407
-B	Train whistles	
414-A	Train—start; run; stop	S.E.7
415-A	Train—pass in tunnel; pass; stop	S.E.31
416-A	Roundhouse, running with whistle	S.E.32
417-A	Zephyr—enter station and idle; leave	1303
-B	Zephyr—crossing whistle; enter station and leave	
418-A	Streamliner—enter station and leave	1302
-B	Gasoline electric—idle; bell; whistle; leave Passenger—approach; whistle; leave	
419-A	Motor train—approach; pass; recede	1056
-B	Stop and start	
420-A-B	Motor train—European train—start; run; stop	Y.B.6
421-A-B	Passenger elevator; underground train	S.E.44
422-A	Train—Diesel engine	7810
-B	Santa Fe steam engine	
423-A	Santa Fe Chief steam engine	7811
-B	Santa Fe local freight	
424-A	Train—gas-electric local	7812
-B	Santa Fe local freight	
425-A	Southern Pacific Owl, enter station, stop, stand, start, leave	7822
-B	Southern Pacific Sunset, Ltd.—whistle and pass; approach and stop; whistle, start, leave	
See also 215	Diesel electric—arrive; stop; start	
See also 1120	Passenger—start and run	
See also 759	Elevated trains	
See also 909	Freight—start and run	
See also 913	Railroad bell	

WEATHER, RIVERS, TREES—CRASHING, AND CHOPPING

500-A	Surf—waves and backwash	M.551
-B	Surf on rocky shore	
501-A-B	River rapids	1028

502-A-B	Waterfalls	1107
503-A	Rainfall	1070
-B	Rainfall and thunder	
504-A	Thunder crashes	ST.7
-B	V8, continuous running	
505-A	Thunderstorm	Y.B.4
-B	Wind and hurricane	
506-A	Howling winter winds	1027
-B	Blizzard—howl of wind	
507-A	Wind howling	1163
-B	Rainstorm	
508-A	Storm at sea	Y.B.7
-B	Sea wash and breakers	
509-A	Steady rain	M.552
-B	Lap and wash of water	
510-A-B	Wind effect	S.E.15
511-A	Heavy surf	1177
-B	Heavy surf with foghorn in background	
512-A	Howling wind; rain and wind	S.E.41
-B	Same	
513-A-B	Thunderstorm; brook; lapping water	S.E.42
514-A	Walking in snow and underbrush	1139
-B	Chopping through ice on river	
515-A-B	Thunder; carnival	S.E.6
See also 700	Waves slap around boat	
516-A	Rapids	M.553
-B	Waterfall; wading in stream	
517-A	Windstorm	M.554
-B	Thunderstorm	
518-A	Gale of wind	M.599
-B	Underground explosions	
519-A	Thunder—one heavy bolt; four heavy bolts; six heavy bolts	M.555
-B	Flood disasters—bridge crashes and washes away; dam breaks; roar of the flood	
550-A	Chopping and tree crashing	1054
-B	Sawing and tree crashing	
551-A	(Don't use this side)	ST.25
-B	Chopping and tree crash; outboard boat	
See also 1019	Sawing wood with handsaw; driving nails	

FIRES AND FIRE TRUCKS

600-A	Fire truck—approach; stop; passing	1088
-B	Same	
601-A	Fire truck—passing with siren and bell	1023
-B	Fire apparatus—continuous	
602-A	Story of a fire (contains music; obtain copyright clearance)	1126
-B	A.D.T. fire alarm; electric siren	

603-A	Trucks and crowd (large fire)	1109
-B	Fire and crowd; pressure hose	
604-A	Siren; bell; auto horn	S.E.5
605-A	Campfire	1057
-B	Fire—burning; extinguishing with water	
606-A	Idling engine pump	M.270
-B	Fire truck—with siren and bells; bell only	
607-A	Fire truck—continuous run and stop	M.271
-B	Metropolitan fire truck—continuous run and stop	
608-A-B	Alarm; engine; phone bell; siren	S.E.1
609-A-B	Fire apparatus	7819
610-A	Fire burning—continuous	7871
-B	Fire apparatus; fire and walls crashing	
611-A	Fire apparatus and tractor	ST.17
-B	Do not use this side	

See also 751 Fire

See also 251 Fire

TRAFFIC

650-A	42d Street and Broadway	M.501
651-A	Indianapolis, with newsboys	1102
-B	Indianapolis, without newsboys	
652-A	Times Square	1116
653-A	Small city	1140
654-A	34th Street and Broadway	1117
656-A	Crowd (wrestling match)	7808
-B	Streetcars	

See also 908 Traffic

BOATS

700-A	Outboard motorboat—start; run; stop; waves slap around boat	M.251
-B	Large motorboat—start; run; stop	
701-A	Speed boat—start; idle; run; stop	M.252
-B	Diesel tug—continuous run; boat whistles	
702-A	Engine room—with signal bells	1132
-B	Boat whistles	
703-A	Engine room—pull out and signal bell	1131
-B	Boat whistles	
704-A	Landing and signal bells	1130
-B	Firing boilers	
705-A	Continuous—running paddle wheel	1129
-B	Boat through lock with whistle	
706-A	Ferry—loading and docking	1119
-B	Ferry—docking	

707-A	Harbor noises	1185
708-A	Harbor foghorn	1111
-B	Harbor foghorn, radio beacon in background	
709-A	Fishing boat—continuous	1183
-B	Motor launch—continuous	
710-A	Harbor noises	M.253
-B	Boat whistles	
711-A	Steamer sailing (crowd and whistles)	1184
-B	Same	
712-A	Harbor sounds—fog horn	7841
-B	Harbor sounds—bell buoy	
713-A	Wild birds	ST.34
-B	Ship engine room	
714-A	Airplane maneuvers	ST.35
-B	Diesel-boat effect (bow wave)	
See also 314	Airplane idle (motorboat)	
See also 551	Outboard motorboat	
See also 914	Steamboat siren	

MACHINERY AND CONSTRUCTION

750-A	Woodworking machines	M.601
-B	Woodworking machines (4 cuts)	
751-A-B	Machinery constant—fire crackling	S.E.22
752-A	Woodworking machines (3 cuts)	1104
-B	Sawmill	
753-A	Newspaper press	1082
-B	Saw matrix roller linotype	
754-A	Drilling oil well	1115
-B	Same	
755-A	Corliss steam engine	1127
-B	Small steam engine	
756-A	Tractor running	S.E.16
-B	Same	
757-A	4-cylinder gas engine; pump	M.603
-B	Hoist engine; air drill; pile driver	
758-A-B	Excavator	1128
759-A	Construction	1118
-B	Elevated trains	
760-A	Manufacturing noises	1191
761-A	Well and pitcher pump; lawn mower	1110
-B	Chicks and hens	
762-A	Riveting (3 cuts)	M.604
-B	Construction	
763-A	Anvil; hand lawn mower	M.606
-B	Steam shovel; power lawn mower	
764-A	Electric drill—in wood; in metal	1134
-B	Hack saw; file	

See also 213 Air hammers

See also 611 Tractor—start; run; stop

WAR

800-A	Explosions	ST.26
-B	Air hammers; tire skids (30 seconds)	
801-A	Manual of arms and firing (infantry)	1084
-B	Marching and firing	
802-A	Cavalry (4 cuts)	1085
-B	Artillery fire (3 cuts)	
803-A	Battle	1086
804-A	Machine guns	S.E.14
805-A	(Don't use this side)	1006
-B	Machine guns (6 cuts)	
806-A	Tank	S.E.18
807-A	Whistling shells; distant cannon	VAL.380
808-A	Distant and close cannon	VAL.381
809-A	Distant cannon; close machine gun	VAL.382
801-A	32-calibre automatic pistol	1058
-B	16- and 12-gauge shotguns	
811-A	Cannon; machine gun; tank	S.E.39
812-A	Automatic pistol (shots)	1007
813-A	Warfare—historic battle scene	M.801
-B	Warfare—modern battle	
814-A	Warfare—machine guns	M.802
-B	Warfare—shells; ricocheting bullets	
815-A	Rifle and pistol shots	M.803
-B	Infantry marching	

See also 1128 Marching feet

WHISTLES, BELLS, AND CLOCKS

900-A	Big Ben	Y.B.13
-B	Telephone bell; clock ticking	
901-A-B	Church bells	1106
902-A	Small steam whistle	1067
-B	Medium steam whistle	
903-A	Large steam whistle	1066
904-A	Large and small wildcat whistle	1062
905-A	Large steam chime	1065
906-A	Train; boat; steam whistle	S.E.4
907-A	Household clocks; Big Ben	S.E.37
908-A	Clock chimes	ST.8
-B	Traffic	
909-A	Freight train—start and run	ST.1
-B	Church bell; train bell; cuckoo	

910-A	Clapper; buoy bell; tympany; roll of drums (could be used as drums of African savages)	S.E.23
911-A	Church bells	1188
912-A	Boat whistles	ST.13
-B	Applause; cheers; laughs	
913-A	Gong (6 cuts)	1094
-B	Railroad bell; church or school bell	
914-A	Work siren; auto horn	S.E.43
-B	Steamboat siren	
See also 409	Crossing bell	
See also 413	Train whistles	
See also 604	Siren; bell	
See also 606	Fire-truck bell	
See also 608	Alarm; phone bell; siren	
See also 702	Boat whistles	
See also 710	Boat whistles	
See also 1004	Alarm-clock strikes	

CARNIVAL*

950-A	"Beautiful Ohio"; "Sidewalks of New York" (see below)	1010
-B	Carnival	
951-A	Carnival	1026
952-A	Carnival	1145
-B	County fair	
953-A	Amusement park; roller coaster	7908
-B	Shooting gallery	
954-A-B	Carnival; thunder	S.E.6
See also 515	Thunder; and carnival	

MISCELLANEOUS

1000-A	Popcorn popping	1055
-B	Bacon frying; coffee percolating	
1001-A	Bowling alley	1105
1002-A	Coal going down chute	1122
-B	Pick and shovel in gravel	
1003-A	Blacksmith's shop	1108
1004-A	Sewing machine; vacuum cleaner	1080
-B	Alarm-clock strikes	
1005-A	Fireworks	1182
-B	Night noises	
1006-A	Breaking dishes	1095
-B	Crashing glass; piano	
1007-A	Walking on duck boards and mud	S.E.38

* No copyright difficulty will be encountered from use of these records, but local musicians' unions may object to their use.

1008-A	Walking on gravel road	1099
-B	Team and wagon on gravel road	
1009-A	Walking and running through underbrush	1123
-B	Pick and shovel in gravel	
1010-A	Footsteps in gravel	1144
-B	Running in gravel	
1011-A	Footsteps in water	1143
-B	Running in water	
1012-A	Footsteps on pavement	1151
-B	Window shade; window opening; door	
1014-A	Restaurant—general confusion; dishes in kitchen	M.509
-B	Newspaper editorial room—telephones; typewriters; copy boys	
See also 514	Walking in snow and underbrush	
See also 906	Steam	
See also 1119	Fireworks	
See also 1140	Night noises	

ANIMALS AND BIRDS

1100-A	Redbird (2 cuts)	1154
-B	Miscellaneous songbirds	
1101-A	English songbirds	S.E.20968
-B	Nightingales	
1102-A	Bird and rattlesnake	1172
-B	Silver gulls	
1103-A	Cows and calves	1031
-B	Calves	
1104-A	Pigs and hogs	1032
-B	Mules	
1105-A	Chickens	1030
-B	Baby chicks	
1106-A	Chickens	1029
-B	Same	
1107-A	Blackbirds; nightingales; canaries	1149
-B	Ducks; hens and cocks; cat	
1108-A	Monkeys and birds; hyena scream; panther and monkeys	ST.16
-B	Screams and boos mixed	
1109-A	Horses on dirt road	M.301
1110-A	Horses on turf and cobbles	S.E.21
1111-A	Hyenas and lions	1040
-B	Miscellaneous wild animals	
1112-A	African lions	1038
-B	American puma or mountain lions	
1113-A	Chimpanzees	1173
-B	Lions and chimpanzees	
1114-A	Sea lions	1171
-B	Same	

1115-A	Bears	1175
1116-A	Gibbon monkeys	1174
1117-A	Pygmy elephant	1039
-B	Elephant and hippopotamus	
1118-A	Frogs	1071
1119-A	Hog calling; harness race	1125
-B	Horse neighing; fireworks	
1120-A	Passenger train—continuous	ST.4
-B	Bulldog; puppy begging; dogfight; puppy lapping milk	
1121-A	Sheep and lambs	1180
-B	Same	
1122-A	Dog bark; baby crying; angry mob	S.E.2
-B	Same	
1123-A	Wolves and coyotes	1170
-B	Animals in zoo	
1124-A	Sheep; rattle of buckets	1187
-B	Poultry house (roosters, geese)	
1125-A	Horse and sleigh	1195
-B	Horse and sleigh—continuous	
1126-A	Canaries	1189
-B	Crowd at bird show	
1128-A	Pack of hounds	Y.B.15
-B	Tramp of marching feet	
1129-A	Dog barks; 2 dogs (hunting scenes)	1149
-B	Puppies whining	
1130-A	Dogs barking (4 dogs); 2 dogs and puppy	1068
-B	Puppies barking	
1131-A	Barnyard	1033
-B	Milking cow	
1132-A	Dogs barking (25 or 30 excited dogs)	1155
-B	English bulldog—puppies; barking; whining	
1133-A	Geese; angry horned owls	1121
-B	Coyotes and timber wolf; fox-terrier puppies	
1134-A	Angry bulldog barking	1146
-B	Beagle hound	
1135-A	Cats—fighting; meowing	1097
1136-A	Chickens—rooster crowing; hens	7840
-B	Turkeys	
1137-A	Cattle—cows and calves mooing	7858
-B	Range cattle—bawling, mooing	
1138-A	Barnyard	7863
-B	Horses; 1 horse walking	
1139-A	Walking in snow	1098
-B	Horse and wagon in snow	
1140-A	Horse and buggy—continuous	1179
-B	Night noises	

1141-A	1 horse—continuous (dirt)	7873
-B	2 horses—continuous (dirt)	
1142-A	Wolf howling; lobo wolves	1196
-B	Wolf howling; answering mate; wolves barking	
1143-A	Lobo wolves—continuous	1197
1144-A	African lions—roaring and grunting	7821
-B	African lions—roaring	
1145-A	Mountain lion; Gibbon ape; mountain lion screaming; Gibbon ape	7880
-B	Asiatic leopard; Sumatran tiger; 2 leopards snarling; leopard roaring; tiger snarling	
1146-A	African lions—2 lions snarling and fighting	7820
-B	2 lions snarling and growling; 1 lion roaring and grunting	
1147-A	African lions roaring and grunting; 1 lion	7821
-B	Several lions roaring	
1148-A	Horse galloping on turf and on gravel; troop of horses passing at gallop; cantering on turf	YB-24
-B	Horses—trotting on hard ground and on turf; cantering on gravel	

RADIO

1200-A	Teletype—one machine; several machines	M605
-B	Tuning radio receiver; short-wave code; static	
1201-A	Radio code transmission—3 frequencies	M.607
-B	Old navy-type transmitter; telegraph sounder	
1202-A	Sound introduction for news broadcast with news boys calling “extra” and without code and teletype	M-1101
-B	Sound introduction—for war news; sport news; weather report; comic news	

APPENDIX II

LIST OF MANUAL SOUND EFFECTS

The following list of manual sound effects is not offered in the hope that it is complete. These gadgets represent most of the effects that are to be found on the shelves of a sound-effects storeroom, but they are added to constantly as necessity demands or as the budget permits. Where school budgets are limited, students can be encouraged to build their own sound effects and also to ransack their attics and cellars for discarded properties that may be contributed to the cause and ultimately rebuilt into workable effects.

Air: Escaping, *see* Tanks

Ball: and glove

Polo and mallet

Pool

Baseball

Basket: *Berry*, bought wholesale, ideal props to break up to give the sound of cracking wood

Large, with hinged cover

Milkman type, wire, containing milk bottles

Bellows

Bells: Ambulance

Bicycle

Buoys

Cow

Desk

Door

Fire

Jingle (a bunch)

Ship

School

Sleigh

Telephone

Town crier

Bolts: Various types and sizes; also, some mounted on heavy board, one or two to a board

Bottles

Boxes: Shot boxes; square foot lined with asbestos sound-absorbing material into which revolvers may be fired

Brief cases

- Brushes:** Scrubbing; rubbed rhythmically on drum head, give excellent sound of surf
- Buzzers**
- Cards:** Decks of
- Carpet beaters**
- Cartridges:** Blank
- Cellophane:** To crackle for *fire* effect
- Chains:** Odd sizes
- Chips:** Poker
- Churn:** Butter
- Cleaner:** Small vacuum
- Clocks:** Old-fashioned works
Alarm
- Chimes:** Four-note dinner
- Cork pops**
- Cornstarch:** Rather loosely packed in 2-pound sacks bound with plumbers' tape; can produce the sound of a footstep in squeaky snow if bag is squeezed rhythmically
- Crockery:** Table dishes, cups, etc.
- Cups and saucers:** Tin
- Cutlery**
- Cymbals:** Large, for *surf* effect
- Doors:** Automobile, portable; others, *see* Chapter on sound
- Drum:** Thunder, as large as possible
- Fire:** *See* Cellophane
- Flames:** *See* Grass
- Football:** Bladder of football containing several BB shot. Given a quick shake close to microphone allowing the shot to roll about produces a splendid *thunder effect*
- Footstep:** *See* Cornstarch
- Gavels**
- Glass:** For crashes. Pane glass 8 by 10". Should always be broken into a container to catch flying bits
- Glassware:** Glasses, etc.
- Gongs**
- Grass:** Bundles of stiff rush grass for underbrush effect and crackling of *flames*
- Grill:** Electric
- Hatchet**
- Hoofbeats:** Coconut shells equipped with small grips. *See* Shells and Trays
- Horns:** Auto; old squeeze-bulb type; fog
Klaxon; various types set in boxes with hinged doors partially or completely to control sound
- Iron:** Electric soldering
- Keys:** On rings
- Knives**
- Latches:** Door, mounted on heavy board

Locks

Logs

Lumber: Odd pieces

Megaphones

Metals: Odd pieces and shapes of

Metronomes

Motor: Small portable, mounted on a board and equipped with plug to fit in wall socket

Music boxes: Before using on air, make sure songs played in boxes are in public domain or that the right to broadcast them has been obtained from the publisher. *See Chapter, Preparation for the Broadcast*, section, Music Copyright Clearance

Noise makers: Halloween or party type

Oscillators: Electric

Pad: Leather, with rattan whips for *shot* effect.

Paper: News

Tissue

Writing

Pistols: Repeating cap, good for sound of cracking *whip*.

Plankings: For footsteps.

Platform: For footsteps

Pocketbooks

Radiator: Small piece of

Rain: Rice, gravel, or bird seed on drum head

Ratchets

Register: Cash

Revolvers

Rocks

Shells: Coconut equipped with grips. *See Hoofbeats and Trays*

Shoes: Leather, squeaky

Shot: *See Pad*

Siphons: Seltzer, the refillable type

Sirens: Fire

Police

Small mouth

Skates: Steel scraped hard on smooth stone makes a realistic skating sound

Roller

Slapsticks: With hinge and spring

Spoons

Stairway: Small, portable

Stones

Surf: *See Cymbals*

Switches: Light, mounted on heavy board

Swords

Tambourines

Tanks: Compressed air. They should be fitted with a gauge showing the amount of pressure in them and also have a pet cock permitting the release and stopping of air on cue for sound of *air* escaping or steam

Tarpaulin: 8 by 10 feet; to spread on floor when using any loose effects such as stones, pebbles, water splashes, etc.; simply protection for floors

Telephones: Coin-box telephone with coin drop. Old-fashioned crank kind

Thunder: *See* Football

Tom-toms

Traps: Drummer's

Trays: Small, filled with earth and a few stones on which coconut shells are stamped for *hoofbeats*; when lined at the bottom with metal to make them waterproof, the earth may be water-soaked to give the sound of horses running in mud. Filled with gravel for footsteps

Typewriters

Utensils: Kitchen, etc.

Vibrator: Electric, shampoo type

Wheel: Emery

Whips: Also *see* Pistols

Whistles: Police

Steamboat, etc.

Wind: Machines

Window: *See* Chapter on Sound

Wood: Sound of, *see* Baskets, Berry.

APPENDIX III

AIDS TO EDUCATIONAL BROADCASTING

Educators who are using or contemplate using radio in conjunction with classroom work should familiarize themselves with the excellent and far-reaching aids to educational broadcasting offered by the Office of Education, U.S. Department of the Interior, Washington, D. C.

U.S. Commissioner of Education, J. W. Studebaker, has said that "every radio station should be the voice *of* the community as well as a voice directed *at* the community . . . because this voice is inevitably a chorus composed of the voices of schools and charities, colleges and clubs, public services and sports, leaders and laymen; a chorus swelling with all the magnificent variety of free American life." It was largely through the efforts of Commissioner Studebaker to assist these groups that the Educational Radio Script Exchange was organized in October, 1936, under the auspices of the Federal Radio Education Committee. The third-edition catalogue of educational scripts, published in May, 1938, listed 181 educational scripts.

In an effort to meet the constantly increasing requests from educational and civic organizations engaged in the study and production of educational radio programs, a supplement was issued listing 100 additional scripts. All the scripts listed are available on a loan basis for periods of 3 weeks, during which time copies may be made for local use. They include script books of

America's Hour of Destiny, Vol. III

America's Hour of Destiny, Vol. IV

America's Wildlife

Brave New World, Vol. I

Brave New World, Vol. II

Brave New World, Vol. III

Brave New World, Vol. IV

Freedom on the March, Vol. I

Freedom on the March, Vol. II

Have You Heard? (15-minute series) Vol. II

Scripts in the series Let Freedom Ring and The World Is Yours.

The scripts furnished by the Script Exchange may be advantageously used by groups interested in educational radio in the following ways:

1. The scripts may be broadcast by school and college groups over local stations.

2. Scripts may be produced as "mock broadcasts" over the school sound system.

3. Scripts may be used in radio speech classes.

4. Scripts and supplementary materials are used to employ radio techniques in the teaching of social science, literature, song, etc., through the facilities of the public-address systems.

5. Scripts are used in CCC camps.

6. Scripts are used by professional production staffs of commercial stations as sustaining programs.

During the past 2 years hundreds of educational and civic organizations have received a total of more than 150,000 copies of Script Exchange continuities and 16,000 production aids. If educators need practical help in planning radio broadcasts, the Script Exchange maintains a general-information service on all matters pertaining to educational radio. The Exchange offers also: a radio manual containing general suggestions regarding the organization and production of radio programs, a radio glossary, a handbook of sound effects, and a book list, or bibliography, including references on script writing and program production. (The National Association of Broadcasters is actively allied with the Federal Radio Education Committee.) All the services of the Script Exchange are offered free of charge. They may be had by writing to the U.S. Department of the Interior, Office of Education, Educational Radio Script Exchange, Washington, D. C.

RADIO SCRIPT EXCHANGE OF THE AMERICAN RED CROSS

In the spring of 1938, the American Red Cross announced a catalogue of educational radio scripts in its exchange at national headquarters, Washington, D. C. This catalogue was offered to users of the Educational Radio Script Exchange of the U.S. Department of the Interior, Office of Education, and many took advantage of the opportunity to obtain the Red Cross scripts, which are widely useful to schools, colleges, drama groups, and social agencies.

Now the Red Cross, as of Sept. 15, 1938, has issued a supplement to the main catalogue, listing thirteen additional radio plays. All have been tested in actual broadcast. Those desiring copies of the supplement, which contains order blanks to be used in securing scripts, should write for "Supplement to ARC 1113." For the main catalogue, request "ARC 1113." There is no charge for catalogue, supplement, or scripts. Address all communications to Public Information Service, American Red Cross, Washington, D. C.

In conjunction with the broadcasts of the American School of the Air, the Columbia Broadcasting System issues a teachers' manual and classroom guide that contains information concerning the broadcasts and their use in conjunction with classroom work. For copies of this manual, teachers should write to The American School of the Air, 485 Madison Avenue, New York City.

EDUCATIONAL AIDS OFFERED BY THE NATIONAL BROADCASTING COMPANY

NBC Music Appreciation Hour

Conducted by Walter Damrosch

With the advent of the 1938-1939 season, the NBC Music Appreciation Hour, dedicated to the schools and colleges of the United States, entered

upon its eleventh consecutive year. Walter Damrosch, musical counsel of the National Broadcasting Company, conducts the NBC Symphony Orchestra in a series of concerts devoted to the purpose of instilling in young American listeners a greater understanding and enjoyment of music.

The purpose of these concerts is to supplement rather than supplant local instruction in the appreciation of music by presenting through the medium of broadcasting a type of program not otherwise available in the average school. A manual designed to aid teachers in preparing their classes for the Music Appreciation Hour broadcasts is furnished at the cost of production and distribution—25 cents per copy. A discount of 20 per cent is allowed to schools. The manual is available to the general public as well as to teachers.

In order to promote listener activity, particularly in the form of follow-up work, the National Broadcasting Company has arranged for the publication of students' notebooks. The 1938-1939 edition has been prepared by Dr. Charles Farnsworth, Emeritus Professor of Music Education, Teachers College, Columbia University, in collaboration with Lawrence Abbott, assistant to Mr. Damrosch. The students' notebooks are available both to schools and to the general public at the cost of production and distribution. Prices, including postage, are as follows: in quantities of less than 100, 10 cents each; in quantities of 100 or more, 9 cents each.

IDEAS THAT CAME TRUE

Ideas That Came True is a radio broadcast prepared with a special view to its use in connection with the teaching of the social sciences. It consists of a series of dramatic presentations by Dr. Rollo G. Reynolds, Principal of the Horace Mann School, Teachers College, Columbia University, New York. It deals with such subjects as newspapers, movies, telegraph, telephone, railroads, steamships, and radio. The series is presented each Thursday afternoon from 2:00 to 2:30 o'clock EST over the Blue Network of the National Broadcasting Company. For the use of teachers and pupils the Educational Department of the National Broadcasting Company issues a series of twelve worksheets covering the subjects treated in the broadcasts—"Ideas That Came True." The series will be mailed postpaid by sending 10 cents in stamps or coin to the National Broadcasting Company, Radio City, New York.

AMERICA'S TOWN MEETING OF THE AIR

America's Town Meeting of the Air, conducted by George V. Denny, Jr., is broadcast every Thursday evening, from November through April, at Town Hall in New York City in cooperation with the National Broadcasting Company over WJZ and the Blue Network. It is presented as an NBC educational feature. Schools, colleges, libraries, churches, farm organizations, men's clubs, women's clubs, and forums interested in forming discussion groups are invited to avail themselves of the facilities offered by the Town Hall Advisory Service. Write to Advisory Service, Town Hall, 123 West 43d Street, New York City.

CONTROL ROOM—CLASSROOM

At the University of Iowa, comprehensive and forward-looking work is being done in radio speech and production courses. Actual experience in broadcasting is offered to the most promising students over the university-owned station, WSUI. Many of the programs over this station are written, announced, and produced by university students.

Radio instruction at Iowa comes under the department of speech. New studios are being constructed at the university and will very shortly be finished. The writer had the pleasure of lecturing at the 1938 summer radio session and, with H. Clay Harshbarger, Professor of Speech at the university, evolved an ideal arrangement for presenting instruction and laboratory work in radio production. The following ground plan shows the arrangement and is offered as a suggestion to those schools that are contemplating the construction of adequate facilities for the instruction of various phases of radio speech and production work.

1. The classroom is the control room for the studio. A big double plate-glass window separating studio and class control room provides visibility for the students in the classroom. To enhance the visibility, the seats in the classroom are tiered. The speech input amplifier is located before the window or glass in the right-hand corner of the classroom. To provide greater visibility for the engineer and the director, the area on which the amplifier is located has been raised above the floor level of the studio. Because the sound-effects room can not adjoin the studio, the aisle leading down the side of the classroom to the studio is ramped so that heavy pieces of equipment, such as doors, can be rolled into the studio rather than carried down steps.

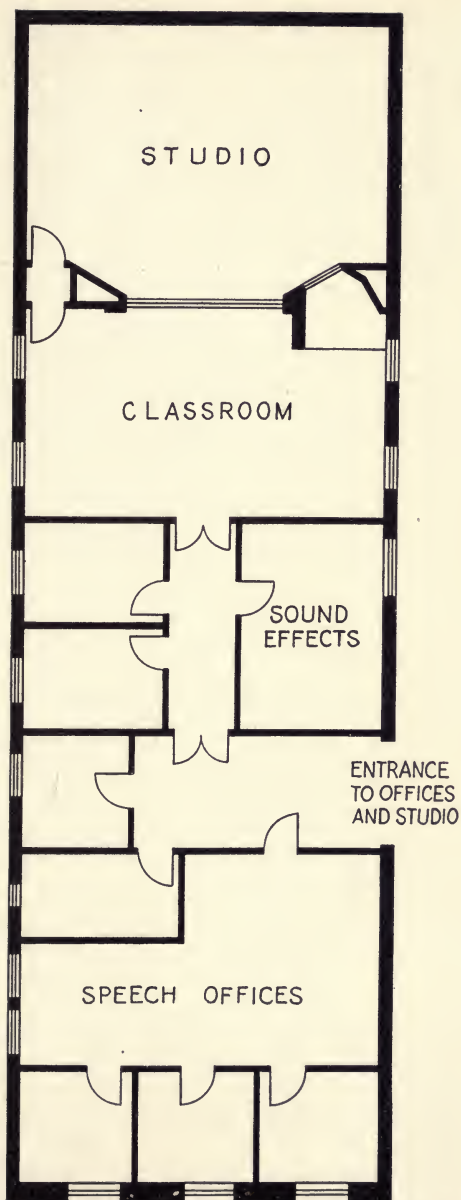
2. The studio is both a rehearsal studio and a broadcasting studio.

3. Undesignated rooms are purposely undesignated so that as uses arise for them they can be most effectively utilized.

SOUND SERVICE FOR SCHOOLS

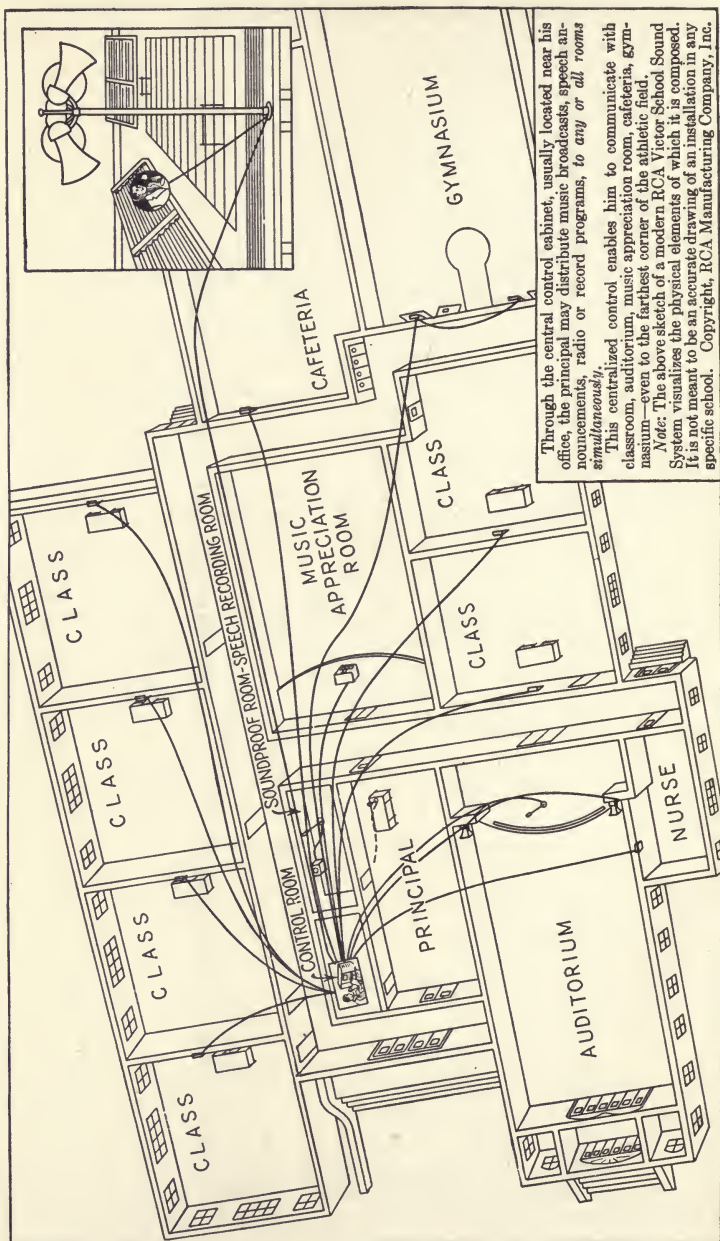
The rapidly growing use of radio in the classroom has made it necessary to provide radio receiving sets suitable for classroom and auditorium service. Excellent equipment for the small classroom is that which provides for the use of both recordings and radio—*viz.*, a Victrola or a radio receiving set with a Victrola attachment. Conveniently portable radio receiving sets and Victrolas are available for those who must move equipment from one room or building to another.

Many larger schools and school systems have found it desirable to use a centralized sound system. Such a system incorporates in one centrally controlled unit the facilities for using phonograph records or transcriptions, radio programs, auditorium programs, local music, speeches, etc., in any or all classrooms, and in the auditorium or gymnasium, on playgrounds and athletic fields. RCA Victor school sound systems are almost unlimited in their application. Two sound systems are available, the smaller of the two, Model MI-6718, is designed for installations in schools with ten to forty



Floor plan showing combination control room—classroom at WSUI, University of Iowa.

TO ANY OR ALL ROOMS SIMULTANEOUSLY



rooms. It has a twelve-tube high-fidelity radio receiver, with electric tuning for eight stations, a Victrola that plays both 10- and 12-inch records, and it provides a microphone to be used in making announcements and communicating with various rooms.

The larger model, the MI-6719, provides complete sound service for 20 to 120 classrooms. It has many advantages over the smaller system. It is regularly equipped with two radio receivers, permitting simultaneous reception of two programs for transmission over two separate circuits to different groups of classrooms. It has automatic record changing¹ for continuous programs of recorded music. It provides for the addition of a recording attachment to record radio programs, speech, music, or any other type of audible sound.

The RCA Victor school sound system also provides for the installation of a microphone and loud-speakers in the auditorium or a public-address system in the athletic field or in the gymnasium. To the school official or principal it affords increased efficiency of administration through the use of the two-way communication feature eliminating time-consuming bulletin and messenger service.

Further information will be provided or demonstrations arranged without obligation for any school official or principal interested. Write the Educational Department, RCA Manufacturing Company, Inc., Camden, N. J.

APPENDIX IV

SIGNALS FROM CONTROL ROOM TO STUDIO FLOOR

During the progress of a broadcast the director must pass on to his coworkers on the floor of the studio a number of signals calling for adjustments to timing, pacing, or microphone position, and he must cue performers, the orchestra leader, and the sound technicians. This work is simplified by a code of signals that is more or less standard throughout the industry. A great many of them have sprouted into life probably because they are mildly picturesque, but only a few are really necessary to the production of the average broadcast. It is possible to direct a great many shows using these few signals.

DIRECTION	SIGNAL
To increase volume.....	Move hands up, palms up. Or rest one palm upon the other. Then raise the upper one, measuring the increase. Stop when the volume is high enough.
To decrease volume.....	Move the hands, palms down. Or hold one hand above the other, palms facing. Lower the lower hand, measuring the decrease. Stop when the volume is low enough.
To cue the start of a line or speech.....	Point directly at the actor.
To cue to take more time or slow down or "stretch".....	Draw the hands slowly apart as if strengthening a rubber band.
To cue to take less time, to hurry and get it over with.....	Extend the index finger and turn the finger rapidly clockwise.
To cue an actor or a sound away from the microphone.....	Move the hand away from the face.
To cue an actor of a sound to come closer to the microphone.....	Move the hand toward the face.
To cue a cut in anything, a speech, a sound, a musical number, a board fade, etc.....	Draw the finger in a sweeping "throat-cutting" gesture.

DIRECTION	SIGNAL
To let anyone know that everything is "O.K."	Form a circle with the thumb and index finger, the other fingers extended (the Ballantine's Beer advertisement).
To ask for people to watch for cue.	Point to one or both eyes.
To indicate a fade-out.	Lower hands slowly, palms down. Turn clenched fist slowly.
To indicate a complete board fade.	Describe a sweeping 180-degree arc.
To indicate board fade-back.	Describe a sweeping 180-degree arc back.
To ask if program is running on schedule. .	Touch the nose questioningly. (This signal would come from the studio floor.)
To let people on floor know program is running on schedule.	Touch the nose.
To ask how the balance is.	Touch the ear with the forefinger; then balance with both hands, palms down. (This question would come from the studio floor.)
To start the theme.	Form the letter T with the forefingers.
To signal to take the first ending and repeat the chorus.	Hold one finger vertically.
To signal to take the second ending and conclude.	Hold two fingers vertically.
To repeat.	The same.
To conclude with the chorus.	Clench the fist during the selection.
To start at the beginning of a musical number.	Point up.
To play the fanfare.	Salute smartly.
To ask for the network cue.	Show a clenched fist to the announcer.
To ask the announcer to identify the local station.	Show to the announcer the letter L, formed by the thumb and forefinger.

APPENDIX V

GLOSSARY OF COMMON RADIO TERMS

AAAA. American Association of Advertising Agencies.

across beam or mike. Sound directed across the area of microphone sensitivity.

ad lib. To inject into performance improvised lines or business not written by the author. Music phrases or parts played but not written.

A.F.M. American Federation of Musicians.

A.F.R.A. American Federation of Radio Artists.

A.G.R.A.P. American Guild of Radio Announcers and Producers.

A.I.R.S. Association of Independent Radio Stations.

ASCAP. The American Society of Composers, Authors, and Publishers.

A.M.P. Associated Music Publishers, Inc.

A.N.A. Association of National Advertisers.

background. Music, ad libbing, or effect inserted behind dialogue for realistic or emotional effect.

balance. The placing of instruments, voices, or sound effects in such positions in the studio with relation to the position of the microphone that they are produced in their proper tonal and perspective relationship to one another.

beam. That area on the live side of a microphone in which sound is picked up for transmission with maximum clarity.

beard. An error in performance, more often words misread by an actor.

bend the needle. To use so much volume so suddenly that the needle on the engineers volume indicator is shot past its normal range.

birdie. A birdlike, whistling chirp heard occasionally on transmission lines.

bits. A small part of only a few lines in a dramatic script.

bite off. To cut off a line, a cue, or a musical number while the show is on the air.

blasting. Overloading a microphone; producing more volume of sound than the equipment can absorb, with the result that distortion is created.

board. The control console to which the microphones are wired and at which an engineer works in a control room.

board fade. The operation by which the sound of the entire program is faded down or in on the control console.

blinker. A signal or warning light operated by the engineer calling the attention of the orchestra leader or members of the cast.

break. A scheduled or unscheduled interruption of a program.

bridge. A definite music or sound effect cue tying up two dramatic scenes.

bring it up. To signal or order an increase in the volume level of speech, sound, or music.

C.A.B. Cooperative Analysis of Broadcasting.

call letters. Those initials assigned by the Federal Communications Commission to identify a station.

canned music. Recorded music or transcriptions.

cans. Headphones.

CGM. An NBC term indicating that the chimes will originate in Chicago.

chain. Two or more stations linked together for the joint transmission of programs.

channel. An electrical circuit.

chimes. Musical notes used to identify a station.

clambake. An unhappy broadcast that started out to be something big but flopped because of mistakes of any and all sorts. By extension, any bad broadcast.

clear. To obtain from the properly appointed authorities permission to broadcast a musical number.

clear the rights. To obtain permission to broadcast literary or musical rights.

cleared channel. A frequency for the use of which for a definite period the exclusive right has been obtained.

cliff hanger. A serial geared to a high pitch of excitement. The kind of broadcast mother does not care for, but highly regarded by the youngsters.

cold. Opening a broadcast with no preliminary music or effect. Said of a line or announcement with no background of music or effect.

coming up. A verbal warning that the broadcast is about to start.

commercial. A program advertising a product and paid for by a sponsor. The sales material read on the broadcast.

commercial credit. A mention of the product by name.

conflict. A performer engaged for two broadcasts, the rehearsal periods of which overlap.

corn, corny. Outmoded or overly sentimental music or dialogue. Old or naïve gags. The adjective describing them.

cornfield. A studio setup employing many standing microphones.

control room. A room commanding a view of the studio. It is from the control room that the director directs the broadcast and the engineer rides gain or modulates the amount of sound to be transmitted.

continuity. The prepared script of the broadcast.

crank gain (up or down). To raise or lower the level of transmitted sound.

credits. Acknowledging the source or ownership of broadcast material of whatever nature.

cross-fade. The simultaneous fading out of one element of a program with the fading in of another.

cross-talk. Conversation picked up from a source not connected with the program, leaking in through some transmission fault.

cue. A signal to start or stop any element of a broadcast.

cuesheet. A listing of all the cues in their order, giving a bird's-eye view of the entire routine of a show.

cuffo. Receiving no compensation.

cushion. Material of easily changeable length inserted toward the close of a broadcast that will enable the director to end the broadcast on time. It may be dialogue or music or sound. It may be a normal part of the broadcast, or it may be inserted deliberately into the final portion of the broadcast.

cut. Any material taken from a broadcast to enable the show to fit the required length. It may be a "tentative" cut, that is, a cut marked to be used, depending upon the time exigencies existing during the show.

cut a record, disk, or platter. To make a recording.

dampen the studio. To decrease the reverberation quality of a studio by increasing the area or number of sound-absorbing factors in a studio, *i.e.*, draperies, curtains, rugs, gobos, people, etc.

dawn patrol. Personnel concerned with early morning broadcasts.

dead air. A failure of transmission. Also an unforeseen halt in the progress of a program through failure of the personnel.

dead end. That portion of a studio in which the sound-absorbent characteristic is exceptionally high.

dead mike. One that is completely turned off.

definition. The clarity of sound that is transmitted or received. It may refer to clarity of voice, sound effect, or unit in an orchestra.

down in the mud. Having extremely low volume of sound.

dress. The dress rehearsal or the act of going through the dress rehearsal.

dub, dubbing. To transfer recorded material from one record to another.

echo chamber. A labyrinthine room laid out to receive sound fed into it from a program through a loud-speaker into a microphone at the opposite end for retransmission to the original source. It produces an accented echo quality in the sound.

eight-ball. A dynamic or pressure-actuated microphone with a non-directional characteristic.

electrical transcription. A recording made for broadcasting.

facsimile broadcasting. The process yet in an early stage of development of transmitting newsprint, photographs, and similar graphic material for pickup on receiving devices.

fade. To diminish the volume of a program or an element in a program.

FCC. Federal Communications Commission.

feed. As, to feed the network; to transmit a program to another station.

fill. Additional program material.

fill-in. A person or program standing by ready to substitute for another.

filter. An electrical device by the use of which tonal characteristics are changed through the elimination of certain frequencies.

flesh peddler. An agent who sells the services of performers.

fluff. A mistake; more specifically, a mistake in reading.

FTC. Federal Trade Commission.

gag. A joke, or comedy device.

gain. Additional volume, or the device by which the volume of sound fed to a microphone is increased.

gooseneck. A microphone suspended from a gallows-shaped support for use over tables when the broadcaster is seated or for children. Sometimes referred to as a gallows mike.

ham. An amateur broadcaster.

hop. The over-all amount of volume an engineer allows to be fed either to the monitor alone or to master control for transmission over the air.

hot mike. A live or open microphone picking up sounds.

jam session. The performance of standard popular tunes by an orchestra in which there is excessive ad libbing or improvisation around the melody line.

key station. The point of origination of a network station.

kill. To omit a portion or all of a broadcast.

kill a mike. To cut down the gain to zero.

lay an egg. To fail completely to arouse laughter with a joke. By extension, to broadcast a program that is an embarrassing failure.

lead. One of the important parts in a dramatic program.

leaving here O.K. A phrase used by engineers to indicate that all is well with the transmission as it leaves him.

leg. A regional chain that is one station in a link of stations of a network.

level. The amount of volume that is being transmitted.

line. A wire for the transmission of a program.

listening area. That area in which the signal of a station is clearly heard.

live mike. Same as a hot mike.

live studio. One that has a high reverberation quality.

local or local station. A single station; also, the identification of that studio at regular intervals as prescribed by FCC rules.

log. A complete record of everything that takes place every minute of a broadcast as prescribed by law. It contains listing of personnel, timing, accidents, delays, orchestral instrumentation, etc., etc.

loop. A line or a network, or a small group of stations comprising a part of a network.

loss. A decrease in volume.

make system. To announce the name of the network carrying the program.

make local. To announce the call letters of the local station carrying the program.

MC. Master of ceremonies.

- master control.** The focal point to which all studios in a station are joined and from which programs are relayed for transmission.
- middle break.** Announcement of station identification at or near the middle of a program.
- mike.** A microphone.
- mike hog.** An actor who always makes it his business to elbow or jostle his fellow performers away from the microphone in order that he may be heard to better advantage than they.
- mike technique.** A knowledge of the pickup characteristics of a microphone and a consequent adjustment to performance to suit those characteristics.
- mix.** The combining of the input of two or more microphones so that a perfect balance is obtained.
- monitor.** To listen to a program over audio equipment.
- M.P.P.A.** Music Publishers Protective Association.
- NAB.** National Association of Broadcasters.
- NAEB.** National Association of Educational Broadcasters.
- N.E.** New England Network.
- nemo.** A program originating outside the studios.
- network.** A group of stations linked together by wires for the purpose of broadcasting the same programs simultaneously.
- off.** Sound directed away from the beam of the mike.
- off mike.** Sound directed from a performer who is situated away from the microphone.
- on the air.** The actual period during which a broadcast is being transmitted on its wave length.
- on the button.** A program finishing exactly on time.
- on the cuff.** Receiving no compensation.
- on the nose.** Same as on the button.
- one and one.** Instruction to an orchestra leader to play one verse and one chorus of a song.
- one and two.** Instruction to orchestra or soloists to sing one verse and two choruses.
- one shot.** A program intended for one broadcast, not one of a series.
- on.** Sound directed at the microphone from the ideal point of pickup.
- over.** A program that exceeds its allotted program time.
- p.a.** Public-address or talk-back system.
- panel.** A control board of one or more units.
- patch.** A temporary electrical connection of studio equipment.
- patch in.** To tie in two or more electrical units to form a circuit.
- pay-off.** The essentially funny part of a gag or witicism, usually at the end.
- peak.** Maximum amplitude of sound in electrical energy formed while current is flying through a circuit and the distortion resulting therefrom when it is too great for the apparatus.

- pickup.** The position of microphones with relation to various program elements. A pickup is also an electro-mechanical device for picking up the sounds on a phonograph record and passing them on to a loud-speaker.
- pick up a cue.** To speak when the preceding performer has finished his line without permitting unlikelike pauses between lines.
- pipe a program.** To distribute a program from one point to another. Or to send it from one point to another over a private line hired for that specific purpose.
- p.l.** A private line.
- platter.** A phonograph record or a transcription.
- playback.** To play a fresh recording.
- plug.** Mention of a name or program material or of an advertised product.
- production.** The building, organizing, routining, and direction of a radio program.
- production director.** The person in charge of building or directing a radio program.
- projection.** Lifting the voice beyond the limits necessary for adequate pickup and balance.
- record audition.** A recorded audition or an audition of a recorded program.
- remote control.** A program monitored by an operator at a point outside the studio.
- repeat.** A broadcast performed for a second time for the benefit of a portion of a network that did not receive it the first time because of time differences.
- ride gain.** The act of modulating the various levels of sound in order to transmit sound properly.
- round robin.** A wire loop passing from an originating point to one or more other points and returning. It may be broken at any point, and programs may be sent either way or both ways, and it may be used for splitting a network.
- rebroadcast.** See "repeat." A short-wave broadcast may be picked up and rebroadcast.
- schmalz, schmalzy.** Refers to a manner of playing a number with cloying sweetness or oversentimentality.
- script show.** One that is essentially a dramatic broadcast.
- setup.** It may refer to the location in which musical instruments are placed in relation to the microphone. In a larger sense it means the location of all the elements that comprise the broadcast, the *tout ensemble* of the show. The engineering equipment may be also "set up" or made ready for transmitting the program.
- segue.** A transition from one musical number to another without stopping between them. A blending of dissimilar elements.
- SESAC.** Society of European Stage Authors and Composers.
- short.** Insufficient material to fill the time allotted for the broadcast.
- show.** Any broadcast.

- signature.** Any pattern used at the beginning of a broadcast to identify it from all others.
- sneak.** To introduce music into a broadcast from pianissimo behind dialogue or effect until its presence is felt as a part of the drama. It may be brought up to full volume or may be "sneaked out" as unobtrusively as it was introduced.
- snapper.** See "pay-off."
- sock.** May be the tag line of a gag, or it may refer to a cue played fortissimo.
- sound man.** One who produces realistic sound effects vocally, manually, or by the use of electrical recordings.
- sound table.** A prop table on which the sound man arranges his effects with relation to the microphone.
- slap bass.** An effect achieved by slapping the strings of a bass instead of drawing the bow over them.
- sound panel.** A portion of a studio or control-room wall treated acoustically for sound absorption.
- sour.** A note sung or played off key. Also, any note played off key may be termed "E flat."
- split network.** The simultaneous transmission of two or more programs to two or more sections of the network, a situation frequently occurring when programs are repeated, one section taking the repeat and the other a different broadcast.
- split setup.** A method of arranging the instruments of an orchestra in such a way that advantage is taken of the bidirectional pickup characteristic of a microphone.
- sponsor.** One who pays the cost of a program broadcast in the interest of a product or cause.
- sponsored program.** A program or series of programs the cost of which is assumed by an advertiser.
- spot broadcasting.** The purchase of time and facilities by an advertiser on one or more local stations for the purpose of broadcasting electrical transcriptions or local live-talent shows advertising his product.
- spread.** To stretch any part of a broadcast for the purpose of filling the allotted time of the broadcast.
- stand-by.** A substitute program ready to go on the air in the event of any emergency.
- stand by.** An order to get ready to go on the air.
- stick waver.** An orchestra conductor.
- step it up.** To increase the volume.
- stretch.** Same as "spread." Also, to play at a slower tempo the last musical number of a show in order to finish at the scheduled time.
- surface noise.** Noise caused by the needle passing in the groove of a record. Usually present in accentuated form when the record is worn or defective.
- sustainer or sustaining program.** A program put on by a station or network, unsponsored by an advertiser.
- sync (sink) or synchronize.** The synchronization of two or more stations to one wave length or ending two programs on two networks, so that

network legs may be switched from one to the other or to a common program.

take it away. A cue to proceed given by one engineer or announcer to the engineer or announcer in another studio.

take a balance. To test the sound level and quality of any portion of a program.

talk in his whiskers or beard. To speak with a muffled, indistinct voice.

teletype circuit. A system of intercommunicating typewriters.

theme. Same as "signature."

time check. Synchronizing the watches and clocks of all concerned in the production of a show.

tight show. One that has been timed and found to take exactly the length of time allotted for it, permitting no variation in pace or playing over the dress rehearsal time. It may even run over the allotted length of time, necessitating a speeding up in playing or taking advantage of optional cuts provided in order to bring the program out on the nose.

transcription. An electrical program made for the express purpose of broadcasting in contradistinction to a recording that is made for general or home use.

transition. A change from one dramatic element of a program to another, achieved musically by the use of a sound effect or by a gradual change in the interpretative reading of the lines.

transmission. A program, an "hour," or the modulation of sound by a transmitter.

turkey. A flop, a barney, a bust, a clambake—in short, a bad broadcast.

tying in. A station or a part of a network picking up a program that is already in progress.

under. A program that is too short for its allotted time, necessitating stretching.

uni-directional. A microphone that is sensitive on only one side.

v.i. Volume indicator.

velocity. A microphone actuated by the velocity principle.

visual show. One that is presented before spectators.

web. A network.

whodunit. A general term for mystery melodramas.

woodpile. A xylophone.

woodchopper. A xylophonist.

woof. A word used by engineers to check "peaks."

APPENDIX VI

SCRIPT FOR STUDENT USE

The following script of "The Canterville Ghost"* is offered solely as a practice script in production. Students in production classes at New York University have found it an amusing exercise affording them an opportunity of using many of the mechanical techniques frequently met with in the dramatic broadcast. One of its chief charms lies in its continued freshness in the face of continued rehearsing. Much of this is due to Mr. Walton Butterfield, who adapted it from a short story of the same name by Oscar Wilde. Mr. Butterfield is one of radio's most able and experienced writers. He is at present engaged in writing several of the most successful commercial broadcasts originating on the West Coast. Students of radio writing might compare Mr. Butterfield's adaptation with the original story and note the skill with which he has preserved the comic flavor of the original while making it suitable for broadcasting.

TERROR BY NIGHT

THE CANTERVILLE GHOST

ANNOUNCER

Terror by Night!

SOUND: *The twins burst into laughter. . . . Everybody "shhh's" them loudly . . . then*

ANNOUNCER

(*Surprised*) The Columbia players present a play of the supernatural, Walton Butterfield's dramatization of Oscar Wilde's famous story, "The Canterville Ghost."

SOUND: *Wind.*

HIRAM

Ghosts?

* No performance, either professional or amateur, may be given without the permission of The Columbia Broadcasting System, Inc.

LORD CANTERVILLE

Precisely . . . a ghost!

HIRAM

My lord, you actually expect me to believe that Canterville Chase is haunted or that there exists such a thing as a ghost?

LORD CANTERVILLE

My dear Mr. Otis, I feel it my bounden duty, as the present owner of Canterville Chase, to acquaint you and your family, as the prospective owners, with the facts. Your belief in them rests, quite naturally, with yourselves.

HIRAM

In America, my lord, we have everything that money can buy. We have many of your best actors, your prima donnas, your plays, your novels, your works of art. Believe me, if there *were* such a thing as a ghost in Europe or England, we'd have it at home in one of our public museums or on the road, in a theatrical production!

*LORD CANTERVILLE

Possibly, Mr. Otis, possibly! I fear, however, that the ghost exists . . . though it may have resisted the overtures of your enterprising American impresarios. It has been well known for three centuries and always makes its appearance . . .

HIRAM

At Canterville Chase?

LORD CANTERVILLE

. . . at Canterville Chase, immediately before the death of any member of our family.

HIRAM

Well, so does the family doctor, for that matter, Lord Canterville.

LORD CANTERVILLE

We have not cared to live in the place ourselves.

HIRAM

(*Blustering*) But there is no such thing, sir, as a ghost!

LORD CANTERVILLE

My grand aunt, the dowager Duchess of Bolton, was frightened into a fit . . .

HIRAM

By this "ghost"?

LORD CANTERVILLE

. . . by two skeleton hands being placed on her shoulders as she was dressing for dinner.

HIRAM

Imagination, Lord Canterville, pure . . . maybe impure . . . imagination!

LORD CANTERVILLE

In conclusion, Mr. Otis, I feel bound to tell you that the ghost has been seen by several members of my family. None of our younger servants would stay with us, and Lady Canterville slept very little at night in consequence of mysterious and persistent noises that came from the corridor and the library.

HIRAM

My lord, I appreciate your frankness. I'll take the furniture and the ghost at a valuation. We won't mind a ghost in the house; it's perfectly all right!

LORD CANTERVILLE

Quite so. Only I beg you to remember . . . I warned you!

MUSIC: *Something bright and suggestive of English countryside, fading for*

MRS. UMNEY

I bid you welcome to Canterville Chase.

HIRAM

Thank you, thank you. . . .

VIRGINIA

(*In background*) Oh, what a lovely house!

WASHINGTON

Say, I'm going to like this!

MRS. UMNEY

Thank you for permitting me to stay on.

ROLAND

(*In background*) Hey, Roger, ask her where the ghost is.

ROGER

(*In background*) Aw, she wouldn't know.

MRS. OTIS

(*Over their chatter*) We should be lost in this great house without your care.

HIRAM

(*Away*) Ummmm . . . tea!

ROLAND

Any cakes, pa? Come on, Roger.

VIRGINIA

Now, don't you children touch anything!

MRS. UMNEY

I laid tea in the library, madam.

MRS. OTIS

So my children have discovered! (*Fading in*) What a beautiful room. Don't you love this black paneling, Hiram?

HIRAM

(*His mouth full*) Huh? Oh, yes . . . very pretty. . . . Better pour the tea, Elizabeth.

MRS. UMNEY

I'll take your wrap, madam.

ROGER

Gee, these muffins are good!

VIRGINIA

They're not muffins, Roger. They're scones. Aren't they, mother?

SOUND: *Slight sound of cups and saucers as Mrs. Otis pours and hands cupfuls to Mrs. Umney for serving.*

MRS. OTIS

What, dear?

ROLAND

I don't care whether they're scones or muffins, they taste swell.

ROGER

I'd rather have cinnamon toast!

MRS. OTIS

Tea, Washington?

WASHINGTON

(*Away*) No, thanks, mother. Gee, I don't think I've seen such a beautiful sunset since we've been in England.

HIRAM

Well, we deserve a clear day for a change.

VIRGINIA

I never dreamed there could be so much rain in one month, but today is perfect.

SOUND: *Slight sound of cup being pushed on silver tray and spoon falling.*

MRS. OTIS

Oh, dear, I pushed something off the tray . . . a spoon, I think.

MRS. UMNEY

(*Away but coming in*) I'll get it, madam.

MRS. OTIS

Thank you, Mrs. Umney, right over there in front of the fireplace. I must have . . . why, Mrs. Umney, that spot! Children, did you spill anything!

VIRGINIA

Where, mother?

MRS. OTIS

There in front of the fireplace. I'm sure something has been spilled.

MRS. UMNEY

Yes, madam; blood.

MRS. OTIS

Blood?

HIRAM

(Fading in) What's this?

MRS. UMNEY

Blood has been spilled on that spot.

VIRGINIA

Ohhhhh! . . .

ROLAND

(Coming in) Get out of my way, Roger. Lemme see the blood!

MRS. OTIS

Are you serious, Mrs. Umney?

MRS. UMNEY

Quite, madam.

HIRAM

Here, let me see.

MRS. OTIS

How horrid! I don't care at all for blood stains on the carpet.

HIRAM

Don't worry, Elizabeth; we'll get rid of it.

MRS. UMNEY

It's the blood of Lady Eleanore de Canterville.

MRS. OTIS

I don't care whose blood it is, Mrs. Umney; it must be removed.

MRS. UMNEY

(Unhurried and unperturbed) She was murdered on that spot in 1575.

VIRGINIA

(Horried) Murdered . . .

MRS. UMNEY

Yes, miss, murdered . . . by her own husband, Sir Simon de Canterville.

WASHINGTON

Say, dad, some family, these Cantervilles!

MRS. UMNEY

(As though uninterrupted) Sir Simon survived her nine years and then mysteriously and suddenly disappeared. His body has never been discovered. It's his spirit . . . his guilty spirit . . . that still haunts the Chase.

HIRAM

What nonsense. Get the Pinkerton from my suitcase, Washington.

ROGER

Gee, it's a swell blood spot, ain't it, Roland?

MRS. OTIS

(Faintly) Have it removed at once, Mrs. Umney.

MRS. UMNEY

(Politely but firmly) It cannot be removed, madam.

HIRAM

Bah. Pinkerton's Champion Stain Remover will clean it up in no time. *(As though on his knees, scrubbing)* There, you see . . . it's disappearing already. . . .

MRS. UMNEY

But, sir . . . Mr. Otis . . . I beg of you . . .

HIRAM

See? Now it's all gone. I knew Pinkerton would do it.

SOUND: *Fearful peal of thunder.*

MRS. UMNEY

(Faintly) You shouldn't have done it, sir, you shouldn't . . .

MRS. OTIS

Hiram. Quickly. Mrs. Umney has fainted. Virginia . . . get me some water.

HIRAM

What good is a housekeeper who faints?

MRS. OTIS

Hush, Hiram.

VIRGINIA

(*Coming in*) Here, mother.

MRS. OTIS

Now, what do you suppose made her faint?

VIRGINIA

Maybe it was that blood stain.

HIRAM

She ought to be used to it . . . since 1575.

MRS. OTIS

There, she'll be all right now. Are you better, Mrs. Umney?

MRS. UMNEY

(*Coming to*) Oh, madam, there's trouble coming now . . . and this your first day in the house.

HIRAM,

What do you mean, trouble?

MRS. UMNEY

I've seen things with my own eyes, sir, that would make any Christian's hair stand on end. There are awful things done here.

MRS. OTIS

If you're talking about ghosts, we're not afraid of ghosts, are we, children?

VIRGINIA

Of course not.

ROGER

I'd like to *see* a ghost, though.

ROLAND

So would I; a *big* one.

MRS. UMNEY

Many and many a night I've not closed my eyes for even a wink of sleep. Tonight is sure to be another. I'll take my supper in my room, if you don't mind. (*Fading*) That storm didn't come up sudden like for nothing. Good night to you, madam, and you, sir . . . and the Lord protect you all. . . .

SOUND: *Heavy thunder and wind fading away into*

MUSIC: *Up and down into grandfather clock striking 12 (away).*

HIRAM

(*On seventh or eighth strike*) What's that striking now, Elizabeth?

MRS. OTIS

(*Sleepily*) It must be twelve. We came up about eleven. Go to sleep, Hiram. . . .

HIRAM

I've been asleep. Just before the clock started to strike I thought I heard something outside in the hallway. A sort of clanking sound.

MRS. OTIS

Now, Hiram, if you're trying to frighten me . . .

HIRAM

Of course I'm not trying to frighten you. But I tell you I heard something. Be quiet.

SOUND: *Metallic clanking sound far away.*

HIRAM

There. Do you hear that?

MRS. OTIS

(*Somewhat alarmed*) Yes, I did, Hiram. It sounded like a . . . a chain, being dragged.

SOUND: *Clanking draws nearer.*

HIRAM

Like a *rusty* chain.

MRS. OTIS

Get up. Strike a match. It's coming nearer.

SOUND: *Clanking continues to draw nearer. Clanking outside door.*

MRS. OTIS

It's right outside the door now. . . . See what it is, Hiram.

HIRAM

(Fading somewhat) That's exactly what I'm . . .

SOUND: *Door opens . . . definite clank.*

MRS. OTIS

(Screams)

SOUND: *Door closes with a slam.*

HIRAM

(Fading in again) What the devil are you screaming about, Elizabeth?

MRS. OTIS

(Breathy) Didn't you see it, Hiram?

HIRAM

(As though rummaging in something) Of course I saw it.

MRS. OTIS

Horrible . . . a terrible-looking old man. . . . His eyes were red as burning coals . . . and his long gray hair was . . . ugh. Something was hanging from his wrists and ankles. . . .

HIRAM

(As before) Chains . . . they're what we heard.

MRS. OTIS

Why don't you do something, Hiram?

HIRAM

(Fading somewhat) I am. . . . Be quiet.

SOUND: *Door opens suddenly.*

HIRAM

My dear sir, I really must insist on your oiling those chains. Here's a small bottle of Tammany Lubricator. I shall leave it here on this hall table.

SOUND: *Bottle being set on marble table top away.*

HIRAM

If you want more, just shout. Good night.

SOUND: *Door shuts.*

MRS. OTIS

Hiram, what did you do?

HIRAM

(*As though climbing into bed*) The only thing I could think of to stop that bloomin' clanking. Maybe we can go to sleep now.

SOUND: *Of bottle being smashed to bits as though thrown with great force against marble slab.*

MRS. OTIS

What was that?

HIRAM

(*As though getting out of bed*) I don't know, but I'm going to find out (*fading somewhat*) Something broke.

SOUND: *Door opens.*

ROLAND

(*Squeals with delight . . . away, as though out in hall*)

ROGER

You missed, him, Roland; now he's gone.

HIRAM

Here . . . what's going on out here?

ROGER

(*Gleefully fading in*) We saw him, daddy . . . we saw him . . . a dirty old man.

ROLAND

(*Gleefully*) It must have been that Canterville ghost.

SOUND: *Door opens away.*

ROGER

Roland missed him, too, Wash . . . almost hit him with our pillow

WASHINGTON

What's all this glass?

HIRAM

It's the bottle of Tammany Lubricating Oil I put out here on the table for that . . . that whatever it was.

ROGER

It was the ghost, daddy, of that old man who murdered his wife down in the library.

HIRAM

Nonsense. . . . You can't tell me . . .

VIRGINIA

(Far away . . . from the floor below . . . screams as she runs up stairs)

HIRAM

What the . . .

MRS. OTIS

Virginia . . . where's Virginia . . . ?

WASHINGTON

(Away) Here she comes. . . . What's the matter, Virge?

VIRGINIA

(Fading in excitedly) Mother . . . daddy . . . I was just down in the library . . . I couldn't sleep and went down for my writing case, which I'd left in front of the fire . . .

ROGER

(Hopefully) Did you see him, Virge?

VIRGINIA

Him? Who?

ROLAND

The Canterville ghost . . . the old man. . . . He was up here in the hall. . . .

ROGER

He broke a bottle to pieces and disappeared just as I threw a pillow at him. Daddy saw him. . . .

MRS. OTIS

Virginia, are you all right?

VIRGINIA

Yes, I'm all right . . . but, mother . . . daddy . . . that blood stain . . . on the carpet in front of the fire . . .

MRS. OTIS

(*Comfortingly*) Yes, dear, forget about it. . . . Your father wiped it out. . . .

VIRGINIA

That's it, mother . . . it's back again . . . redder and bloodier than it was before.

SOUND: *Terrific peal of thunder.*

MUSIC: *Comes in under thunder peals.*

SOUND: *Heavy rain (away) . . . crackling of log fire.*

WASHINGTON

Well, if you ask me, we've been here a whole week, and we haven't made much progress.

VIRGINIA

What can you do in weather like this? We're lucky to have such large fireplaces.

WASHINGTON

I'm not talking about the weather; I'm talking about the ghost.

MRS. OTIS

Oh, now, Washington, can't we go to bed one night without talking about that horrible apparition?

HIRAM

The more we talk about it, Elizabeth, the less it should frighten you. You don't see me, or even the twins, shuddering and screaming. Virginia isn't afraid.

VIRGINIA

(*Wistfully*) No . . . I feel sort of sorry for him . . . poor old ghost.

MRS. OTIS

Well, I can't help feeling that it would be much safer if you, Hiram, and Washington and even the twins took it more seriously. We don't want to have to move . . .

HIRAM

Seriously. I don't mind the old fellow if he'll just keep quiet and let us sleep. After more than 300 years he certainly has a claim on the place. But I'll tell you one thing . . . if he doesn't use that Tammany Lubricator and quit smashing my bottles to pieces I'm going to take his chains away from him.

MRS. OTIS

He who laughs last . . .

HIRAM

Ghosts do not laugh, Elizabeth. Mind you, I do think that pillow throwing and pea shooting . . .

MRS. OTIS

Now, for heaven's sake, Hiram, don't start the twins again; they're fast asleep long ago.

HIRAM

Getting rested up for midnight, probably, the little devils.

MRS. UMNEY

(*Away*) Might I come in, madam?

MRS. OTIS

Of course, Mrs. Umney, come in.

MRS. UMNEY

(*Fading in*) Madam . . . and sir . . . I'm that upset about everything this past week. . . .

MRS. OTIS

Of course, we all are, Mrs. Umney; but it's not your fault; this beastly weather, getting settled . . .

MRS. UMNEY

Not that, madam; it's . . . what goes on at night.

HIRAM

Nonsense; we'll have all those high jinks cleared up in no time, Mrs. Umney. Besides, Mrs. Otis gave you full permission to remain in your room, safe and sound.

MRS. UMNEY

Safe? Was old Madame de Tremouillac safe when she woke up early one morning and saw a skeleton seated in her favorite armchair, reading her diary? Was Lady Stutfield safe when five unseen fingers clutched her throat so tightly that she almost strangled and had to wear a black velvet band around her throat until the day she died? I could go on like that . . .

MRS. OTIS

Please don't, Mrs. Umney. I admit that while I do not, of course, believe in such a thing as this Canterville ghost, there *is* something about the house that . . .

HIRAM

. . . that interferes with our sleep and that we're going to squelch if . . .

MRS. UMNEY

(*Awesomely*) . . . if it costs you the life of one of your family?

MRS. OTIS

(*Weakly*) Mrs. Umney . . . please . . .

HIRAM

Bah. If you persist in your silly fears . . .

MRS. UMNEY

Then, please, may I give notice, sir?

HIRAM

We'll talk about that tomorrow or the next day.

MRS. UMNEY

Tomorrow may be too late. Doesn't the persistence of the blood spot on the library carpet tell you anything, sir?

HIRAM

Yes, that's a humdinger, I must admit. If I myself hadn't locked up the library tight every night after removing the stains . . .

MRS. UMNEY

Six nights it's been, sir, and each morning the blood is back again as though you'd never touched it.

HIRAM

Yes, but what kind of blood is it? Washington, you've got your list.
...

WASHINGTON

Yes, here it is. The first morning it came back blood red and returned even bloodier the next three mornings. The fourth morning it was a dull, almost Indian red. The fifth it was vermilion, and this morning it was sort of a rich purple.

MRS. OTIS

Sort of like a chameleon, isn't it?

VIRGINIA

I don't think we ought to joke about it, mother.

MRS. UMNEY

I *know* you shouldn't, miss.

HIRAM

I'm considering writing an article on the subject of the permanence of sanguineous stains when connected with crime.

VIRGINIA

I think I'll go up to bed now, mother.

MRS. OTIS

I think we'd all better; it's long after eleven. Are you going to lock the library again, Hiram?

HIRAM

I certainly am. Come on, Washington; we may have a new color for your chart tomorrow morning.

MRS. OTIS

(*Away*) Good night, Mrs. Umney.

MRS. UMNEY

(*Away*) Good night, madam, and I pray it is a good night. (*Further away*) Good night, miss.

VIRGINIA

(*As they go upstairs far away from mike*) Sleep tightly, Mrs. Umney.

HIRAM

Did you screen the fire, Washington?

WASHINGTON

O.K., dad; lock her up.

SOUND: *Heavy oak doors being closed and locked.*

MRS. OTIS

(*From upstairs*) Are you coming, Hiram?

HIRAM

(*Calling up*) Coming, Elizabeth (*normal voice as the mike accompanies them upstairs*).

HIRAM

(*Whispering*) It's almost time to wake the twins. Have you got everything ready?

WASHINGTON

Yes, in my closet. I'll wait until just before midnight. (*Full voice*) Good night, dad.

HIRAM

See you later. (*Aloud*) Good night, son.

MUSIC: *Fade in very soft mystery music.*

SOUND: *Distant clock strikes once only.*

ROLAND

(*Whispering*) What time is that, Roge?

ROGER

(*Whispering sleepily*) Half past four. I'm getting sleepy waiting. Wonder what's the matter with the old ghost.

ROLAND

(*Whispering*) Maybe he's died.

ROGER

(*Whispering*) He did that in 1575, or he wouldn't be ghost. Shhh . . . I hear something.

SOUND: *Dog bays in distance.*

ROLAND

(*Whispering*) That's only the dog down in the barn.

SOUND: *Terrific peal of thunder, wind, clanking of chains from distance growing nearer.*

ROGER

(*Whispering*) He must be outside the door now.

SOUND: *Clanking full up, followed by door-hinge squeak . . . terrific crash as of tin pail falling 7 feet to floor. Voice utters wail of terror, fading away, followed by distant crash of mail armor.*

HIRAM

What happened?

WASHINGTON

(*Slowly away*) I think we got him.

ROGER

(*Gleefully*) He tripped on the string. . . . See, it's broken.

ROLAND

(*Excitedly*) And the pail of water fell right on him when our door opened.

WASHINGTON

Did you hear him shriek when he saw our scarecrow?

HIRAM

Look, he knocked it over. The broom handle has gone right through the pumpkin shell.

WASHINGTON

Something tells me that's the last we'll hear of ye olde Canterville ghost.

SOUND: *Thunder peal.*

WASHINGTON

Where's Virginia?

HIRAM

Your mother fainted; she's probably in with her. (*Calling*) How's mother, Virginia?

MRS. OTIS

(*Away . . . faintly*) Virginia's not here, Hiram. Is everything all right?

HIRAM

(*Alarmed*) All right? (*Sternly*) Virginia . . .

WASHINGTON

(*Away as though calling downstairs*) Virge . . . Virge . . .

HIRAM

(*Fading*) Roger . . . Roland . . . help us find your sister. . . . Look in all the rooms.

WASHINGTON

(*Fading*) I'll look downstairs. . . . Virge . . . where are you? . . . Virginia. . . .

MRS. OTIS

(*Fading in*) Hiram . . . what's the matter . . . ? Where is Virginia?

HIRAM

Be quiet, mother. She's around some place.

ROGER

(*Fading in*) She's not in bed, daddy. . . . The bed's all messed up. . . .

HIRAM

(*Eagerly, suddenly*) That you, Virginia?

MRS. UMNEY

(*Away*) No, sir, it's me . . . Mrs. Umney. . . . Has anything happened?

SOUND: *Thunder and rain continue throughout.*

MRS. OTIS

Happened? Mrs. Umney, help us find her. . . . Virginia . . . my little girl. . . . Wake up the servants. . . .

HIRAM

(*Sternly*) Now, Elizabeth, be quiet. We'll find her. . . . She's probably fallen asleep in one of the big chairs downstairs by a fire. (*Fading slightly and calling downstairs*) Is she there, Washington?

WASHINGTON

(*Far away*) No, dad, the library's locked, and she's not in any of the other rooms.

MRS. OTIS

(*Hysterical*) This all comes of your crazy fooling in the halls with that . . .

MRS. UMNEY

With the Canterville ghost, madam. . . . I heard him stalking through the house. . . .

HIRAM

(*Calling downstairs as before*) Washington . . . catch this key and open the library doors. . . . She may have got in there somehow and fallen asleep. . . .

WASHINGTON

(*Far away*) All right, dad.

MRS. UMNEY

Since midnight he's been prowling around. . . .

ROLAND

We didn't see him, Mrs. Umney. . . .

ROGER

We've been waiting for him since the clock struck twelve. . . .

ROLAND

He didn't come out until just a few minutes ago. . . .

MRS. OTIS

(*Sobs*)

MRS. UMNEY

There, there, madam . . . maybe she's safe after all. . . .

HIRAM

(Away, calling down) Is she there, Washington?

WASHINGTON

(From below) No, dad, everything's just as we left it in the library, except . . .

HIRAM

Except what?

WASHINGTON

Except the blood stain; it's back again. . . . Only this time it's much bigger and much bloodier than it's ever been before.

MUSIC: *Sneak in soft background music here which swells at end of scene.*

MRS. OTIS

(Crying) Virginia . . . my baby . . . my baby.

HIRAM

(Fading in) Take her to her room, Mrs. Umney, and wake the other servants . . . and the gardeners too. We'll search the grounds. . . . Daylight's coming.

MRS. UMNEY

(Fading) I knew it. . . . I knew this was to be the night. . . . This is his revenge for all you've done to him the past week.

HIRAM

Be quiet, Mrs. Umney. Virginia can't be far. . . . We'll find her if we have to search every corner and tear apart every brick!

MUSIC: *Up full to fill, then fade.*

GHOST

(Laughs softly, as though to himself)

VIRGINIA

(Softly) Oh . . . is this . . . your hiding place, Mr. Ghost?

GHOST

My name is Sir Simon de Canterville.

VIRGINIA

Yes, Sir Simon.

GHOST

What are you doing here?

VIRGINIA

I started to the twins' room to beg them to leave you alone tonight. I feel so sorry for you, Mr Gh . . . Sir Simon. But the twins are going back to Eton next week; and then, if you behave yourself, no one will annoy you.

GHOST

Behave myself? Then I'd have no reason for existing!

VIRGINIA

You know you've been very wicked. Mrs. Umney told us . . .

GHOST

(*Disdainfully*) Mrs. Umney . . . ugh!

VIRGINIA

. . . the first day we arrived here . . . that you had killed your wife.

GHOST

That was purely a family matter and no concern of Mrs. Umney, or your family, or anyone else.

VIRGINIA

Don't you know it's very wrong to kill any one?

GHOST

Ethics . . . bah! My wife was very plain. . . . She never had my ruffs properly starched. . . . She knew nothing about cookery. . . . She couldn't . . . (*He stops abruptly*)

VIRGINIA

What's the matter . . . are you angry at me for being here?

GHOST

No, though I'm a bit angry at myself for letting you find me. I was resting. But after all, you are much nicer than the rest of your family . . . your father and the boys, I mean; they're rude . . . disrespectful. . . .

VIRGINIA

(As though suddenly seeing something familiar) Ohh . . .

GHOST

What's the matter?

VIRGINIA

So it was you who stole my box of paints! And all the different shades of red are used up! That explains that silly blood stain on the library carpet!

GHOST

Well, what was I to do? It's very difficult to get real blood nowadays. Didn't it frighten you?

VIRGINIA

(Lightly) No, of course it didn't. Though I think it did my mother a little, and it certainly annoyed my father. Mrs. Umney was the only one . . .

GHOST

Ah, yes, Mrs. Umney is a very satisfactory person!

VIRGINIA

I do hope you'll be nice from now on, Sir Simon.

GHOST

No, no, please don't go, Miss Virginia. . . . You're a great comfort to one so lonely and so unhappy as I am!

VIRGINIA

But I'm getting sleepy!

GHOST

(Sadly) Sleepy! I have not slept for three hundred years!

VIRGINIA

Poor, poor ghost; have you no place where you can sleep?

GHOST

(Dreamily) There is a garden where the grass grows long and deep, where the nightingale sings all night through while a cold crystal moon looks down and yew trees spread their giant arms over the sleepers.

VIRGINIA

You mean the Garden of Death.

GHOST

Yes, death. It must be so beautiful to lie in the soft brown earth, with the grasses waving above one's head and listen to silence . . . to have no yesterday and no tomorrow. Have you ever read the old prophecy on the stained-glass library window?

VIRGINIA

Yes, I learned it by heart the first day we came. . . .

(Reciting) "When a golden girl can win prayer from out the lips of sin, When the barren almond bears and a little child shall give away its tears,

Then shall the house be still and peace come to Canterville."

GHOST

(Pleadingly, almost) You can be that golden girl, Miss Virginia, and open for me the portals of death's house, for love is always with you, and love is stronger than death is.

VIRGINIA

I don't think I know what you mean.

GHOST

If you will weep with me because I have no tears . . . and pray for me because I have no faith . . . you who have always been sweet, good, and gentle will move the angel of death to have mercy on me.

VIRGINIA

(Uncertainly) But where would I have to do this, Sir Simon?

GHOST

In darkness filled with fearful shapes, where wicked voices will whisper in your ear . . . but they will not harm you, for against the purity of a little child the powers of hell cannot prevail. *(Anxiously)* Are you afraid?

VIRGINIA

(Almost majestically) I am not afraid; and I will ask the angel to have mercy on you!

MUSIC: *Up full and sweeping.*

SOUND: *A sharp sound as of a panel opening and closing almost simultaneously; then all is quiet as Virginia speaks.*

VIRGINIA

(*Calling*) Mother . . . daddy . . . everybody . . . where are you . . . ? I'm back!

MRS. OTIS

(*Fading in excitedly*) Virginia . . . my darling . . . thank God! Where have you been . . . ? We were just about to send out searching parties. (*Calling*) Hiram . . . Hiram . . . she's here . . . in the upper hall . . . safe and sound!

VIRGINIA

Oh, mother, I'm so sorry you were worried. . . . I didn't know it would take so long.

MRS. OTIS

Take so long?

HIRAM

(*Fading in*) Virginia! Where have you been, child? (*Calling*) Come up, boys, she's here. Tell the servants to go back to bed!

MRS. UMNEY

(*Fading in*) Oh, Miss Virginia . . . are you really safe?

MRS. OTIS

(*Softly, as though to herself*) My baby . . . my baby. . . .

WASHINGTON

(*Fading in hurriedly*) Virge . . . where on earth have you been?

ROLAND

(*War whooping in the distance*) Here she is, Roger, here she is! Hurray . . . hurray!

HIRAM

Well, Virginia, *where* have you been?

VIRGINIA

(*Quietly*) I've been with the ghost, daddy. He is dead; after waiting three hundred years, he has gone to sleep in peace. Would you like to see him?

MRS. OTIS

Child, what are you talking about?

VIRGINIA

There's a panel in the wall, near the window . . . in the tapestry room. He's there, in a little cell . . . just a skeleton, tied to a huge iron ring.

WASHINGTON

(Fading out) Come on, twins . . . the tapestry room!

MRS. UMNEY

(Impressed) That would be the remains, where they have been hidden all these years, of old Sir Simon de Canterville!

VIRGINIA

Yes, Mrs. Umney. He had been very wicked, but he was really sorry for all that he had done. Before he could really die and go to sleep forever he needed someone to pray for him. So he asked me to pray for him, and I did, and he gave me this box of beautiful jewels before he died.

WASHINGTON

(Away excitedly) Dad . . . come quickly. . . . It's here, just as Virginia said . . . the secret room and the skeleton and everything!

MRS. OTIS

(As though hugging Virginia) Oh, my child, my child . . . what a night of terror and of heartache!

MRS. UMNEY

Never mind, madam, the ghost of Sir Simon will walk no more. See, it's light already and quite clear. *(Slightly away)* Why fancy that!

VIRGINIA

What is it, Mrs. Umney?

MRS. UMNEY

That old withered almond tree in the court. I do believe it's blossomed! Yes, I can see the flowers quite plainly in the dawn!

VIRGINIA

Can you really, Mrs. Umney? Then you need never fear the Canterville Ghost again! *For he is now at rest.*

MUSIC: *Heavy, impressive, majestic music to fill.*

ANNOUNCER

You have been listening to "The Canterville Ghost," by Oscar Wilde.
Those in the cast were:

As Virginia _____
As Hiram Otis _____
As Mrs. Otis _____
As Virginia's brother Washington _____
As the twins _____
As Mrs. Umney _____
As Lord Canterville _____
As the Canterville Ghost himself _____

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